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# THE JOURNAL

OF THE

## TENNESSEE STATE MEDICAL ASSOCIATION

**MID-SOUTH POSTGRADUATE MEDICAL ASSEMBLY**  
Hotel Peabody, Memphis, Tennessee  
February 13-16, 1962

**TENNESSEE STATE MEDICAL ASSOCIATION**  
127th Annual Meeting  
Peabody Hotel, Memphis, Tennessee  
April 8-11, 1962



### JANUARY, 1962

Volume 55

Number 1

a look  
at the  
literature



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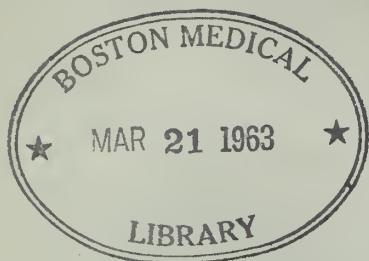
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**References:** (1) Malone, F. J., Jr.: *Mil. Med.* 125:836, 1960. (2) Martin, W. J.; Nichols, D. R., & Cook, E. N.: *Proc. Staff Meet. Mayo Clin.* 34:187, 1959. (3) Ullman, A.: *Delaware M. J.* 32:97, 1960. (4) Petersdorf, R. G.; Hook, E. W.; Curtin, J. A., & Grossberg, S. E.: *Bull. Johns Hopkins Hosp.* 108:48, 1961. (5) Jolliff, C. R.; Engelhard, W. E.; Ohlsen, J. R.; Heidrick, P. J., & Cain, J. A.: *Antibiotics & Chemother.* 10: 694, 1960. (6) Lind, H. E.: *Am. J. Proctol.* 11:392, 1960.

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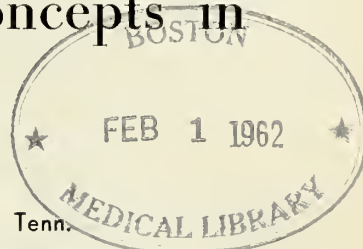
JANUARY, 1962

Number 1

## Symposium: Present Day Concepts in Immunizations\*

### INTRODUCTORY REMARKS

CECIL B. TUCKER, M.D., Moderator, Nashville, Tenn.



*The doctor who wishes to label himself as a family physician has a primary responsibility in the field of preventive medicine. Though this involves many facets of an individual's health, the present discussions have to do with the prevention of certain infectious diseases. Related thinking should not be only with reference to the younger years of life but to the later years as well.*

The function of a moderator of a symposium is to preside and not to enter into a detailed discussion of the topic assigned. It is the function of the individuals selected as participants in the symposium to discuss and express their opinions concerning the subject at hand. Nevertheless, I am taking the liberty of making a few general remarks before introducing the members of the panel.

The physician who practices preventive medicine as a specialty directs his efforts toward the community as a whole. Although he is interested in the health of the individual, this interest is in how the health of the individual affects the general health of the community. On the other hand, the physician in private practice is primarily interested in the health of the individual and the individual's family. He, too, is interested in the general health of the com-

munity. The health of a community can prosper only through the joint and coordinated efforts of these two groups.

Of all the tools available in preventive medicine, immunization can be considered at or near the top in importance. Immunization is not only important but the agents which are available have been tried and proved effective. This preventive procedure is one which is the joint responsibility of the physician in private practice and the physician in preventive medicine.

The physicians in private practice have a unique opportunity in an immunization program—they are the ones who see as patients infants soon after birth. Since it is in early infancy that immunizations should be begun, here is an opportunity which should not be ignored. The physician has the responsibility for the patient, the patient's family, and to the community and should make every effort to see that his patients are protected. The physicians in this state, particularly the pediatricians, recognize this responsibility. Even those physicians who do not administer immunizing agents are in a position to promote the immunization program through patient education. Also, organized medicine can and is promoting excellent educational programs in this field.

As previously stated, the physician in the specialty of preventive medicine has a responsibility to the community. He promotes educational programs through the schools, parent-teacher organizations, civic groups, farm groups, other groups, and through news media. It is his responsibility to see that the individuals not reached by

\*Presented at the meeting of the Tennessee State Medical Association, April 11, 1961, Chattanooga, Tenn.

private practitioners are protected. This is done in well-baby clinics and other clinics operated by local health departments. It requires the joint efforts of private practitioners and local health departments for a level of immunization to be reached in a community sufficient to control disease.

The subject of this symposium, "Present Day Concepts in Immunization" is always timely. Our concepts of this program are

ever changing as medical science advances. Four physicians will speak at this symposium: one will discuss the subject from the viewpoint of the pediatrician; one from the viewpoint of the general practitioner; one from the viewpoint of the surgeon; and finally there is a specialist in this field from the national level, who will act in the capacity of a resource physician and will discuss his concepts of this important subject.

## CURRENT PEDIATRIC PRACTICES IN IMMUNIZATION

LUTHER A. BEAZLEY, JR., M.D., Nashville, Tenn.

All physicians who care for children in their offices have some kind of immunization schedule which they follow. The following schedule is not to be construed as being the only schedule nor necessarily even the best one. It is a satisfactory one which is being used currently in a general pediatric practice. Immunization is a dynamic subject and schedules must be evaluated frequently if the patient is to receive maximum protection. The schedule which appears in table 1 has been revised in some

mittee on the Control of Infectious Diseases.

In addition to presenting an immunization schedule some emphasis should be placed on the highly important role of booster injections. The following antigens are the common ones we all use. They are arranged in order of their relative potency: (1) Tetanus, (2) Diphtheria, (3) Pertussis, (4) Typhoid, (5) Poliomyelitis and (6) Influenza.

Tetanus toxoid is an excellent antigen and provides long lasting immunity. Immunization against tetanus should be universal. Primary courses of immunization should include tetanus in the familiar "DPT" for infants and children up to about nine or ten years of age. A booster should be given about one year after the original series. After this has been administered, tetanus boosters are rapidly effective as long as ten years later. Such a long interval is not recommended, but a booster every two or three years is satisfactory.

Diphtheria toxoid is not as potent an antigen as tetanus but still gives good results. As with tetanus this should be administered in the form of a triple antigen with the infant's primary immunization with a booster dose after one year and every two or three years thereafter. The practice of forgetting diphtheria boosters once a child is school age is to be deplored. For several years now we have been using the "adult type" of diphtheria-tetanus toxoid for our older children—this can be administered every two years with little or no risk, and we believe this is really more efficient than doing Schick tests on all these children.

The pertussis antigen is also of low potency, but like diphtheria when properly

Table 1  
SCHEDULE FOR IMMUNIZATION

| Age  | Antigen     |
|--|-------------|
| 6 wks.   | DPT #1      |
| 12 wks.  | DPT #2      |
|  | POLIO #1    |
| 18 wks.  | DPT #3      |
|  | POLIO #2    |
| Smallpox—after 3 mos. of age (during cool weather)   |             |
| 1 yr.  | POLIO #3    |
| 1½ yrs.  | DPT booster |
| Typhoid—After first birthday and before exposure to swimming or well water; Booster I.D. every year. |             |
| Polio booster every year.  |             |
| Over 6 years—diphtheria tetanus ("adult type") every three or four years.                            |             |

detail two or three times a year during the past several years. With the large number of current studies under way we have to be ready to change vaccines, time interval, age of administration, manufacturer, etc. Our responsibility is to keep an open mind and be ready to make changes in our present schedules when evidence warrants it. Not included here are antigens such as rabies, tuberculosis, cholera and other more exotic vaccines. Information on the proper use of these materials can be obtained from the U. S. Department of Health, Education and Welfare, Public Health Service and the Academy of Pediatrics, Report of the Com-



used is a formidable defense against active disease. This vaccine is so effective, as a matter of fact, that whooping cough is a "curious" disease to medical students nowadays. Hopefully they will see enough of it to engender in them a respect for it. Early immunization of the young infant is more important with pertussis than any other antigen. Boosters should be given at one year and about every two years thereafter until 6 or 7 years of age—at this point it can be dropped from the schedule.

Typhoid-paratyphoid vaccine is widely used in our state and I am not prepared to defend it or to advocate it vigorously. Admittedly it is a poor antigen and as such yearly booster doses seem advisable. Intradermal administration of this vaccine avoids most constitutional reactions and really does not take much more time as a procedure after the office aide becomes adept at the art of intradermal injections. This vaccine is given at any age at which exposure may begin. As a rule of thumb I formerly recommended it after the first birthday and before the second summer. However, that phrase "second summer" smacked so much of old wives' tales of second summer diarrhea, that now I merely say—when he starts going to the swimming pool or creek, or if he is going to drink well water!

Polio vaccine has no doubt been the most publicized and controversial substance ever introduced to the public. The dust has not yet settled on the controversy over the best schedule for Salk vaccine, and now we are faced with the prospect of considering oral vaccine. Here we can only accept work done by reliable investigators and follow our own conscience. Most pediatricians in our area as well as the local county health department are now giving yearly booster doses of the Salk vaccine. The work done in this field by Christie and Batson at Vanderbilt has influenced our own schedule greatly. This field cannot be dealt with dogmatically at the present time.

Smallpox vaccination is best done at

about six months or younger. There are two reasons for this age: (1) less severe reactions, and (2) less chance of autoinnoculation. The chick embryo vaccine has proved in our hands to be uniformly successful in "takes" and lack of secondary infection. The usual precautions about allergic skin rash in the patient or siblings are to be followed the same as with calf lymph virus.

Influenza polyvalent vaccine is an accepted tool in the control of influenza outbreaks. This is not a potent vaccine, but again if used properly with respect for its limitations individual patients can usually be protected. The constitutional reaction from subcutaneous use has been so great that we have given all of it intradermally for the past two years. With this technic we have not recorded any severe reactions; no distinction has been made between allergic and nonallergic patients. Of course the efficacy of influenza vaccine cannot be determined without extensive laboratory data, so we can draw no conclusions about our results with this vaccine. It is recommended however when parents inquire about it, and we give 0.1 cc. intradermally and repeat this dose in 7 to 10 days.

Even a brief discussion of immunity is not really complete without at least mention of maternal passive immunity. Table 2, Dr.

Table 2

| PASSIVE TRANSFER OF NATURALLY ACQUIRED<br>IMMUNITY FROM MOTHER TO BABY (CHRISTIE) |                               |
|---|-------------------------------|
| <i>Disease</i>  | <i>Duration of Protection</i> |
| Pertussis   | None                          |
| Chickenpox  | Very brief                    |
| Smallpox  | Very brief                    |
| Measles   | 4-5 mos.                      |
| Mumps   | 4-5 mos.                      |
| Diphtheria  | 6-9 mos.                      |
| Poliomyelitis   | 6-12 mos.                     |
| Scarlet fever   | 10-12 mos.                    |

Amos Christie's, shows some facts that are always useful to have in mind. The salient features are: little or no immunity to pertussis, chicken pox, or smallpox; immunity for rubeola, mumps and diphtheria for about 6 months; for poliomyelitis and scarlet fever 6 months to a year.

## GENERAL PRACTITIONER'S VIEWPOINT ON IMMUNIZATION

JOHN S. DERRYBERRY, M.D., Shelbyville, Tenn.

I am indeed happy to represent the Tennessee Academy of General Practice on this panel discussion of immunization. I believe that the general practitioner along with the pediatrician and the county health officer in each community plays a most important role in the immunization of the general public. Those of us who practice in areas where there are no pediatricians share the responsibility with the public health officer alone.

Certainly the State Department of Public Health has done a tremendous job in immunizing the children of this state through their school programs. I know of no other way by which the mass of our population of pediatric age could be protected as well or for whom the follow up immunizations could be carried out as thoroughly. I feel strongly that the practitioner who assumes the responsibility of giving immunization must also assume the responsibility for follow-up booster doses, and must see that they are maintained throughout the years. With the present day medical knowledge acquired by most of the people of this country, only a notice or a brief word is necessary to see that immunizations are kept up to date. New and effective antigens are constantly being introduced, old ones are being modified and improved. These factors make immunization procedures a dynamic subject in need of constant re-evaluation.

In general, I use the procedures as outlined by the State Department of Public Health, with only a few modifications of my own which seem to suit my personal practice somewhat better. I begin my infant patients on their course of immunizations at 3 months. I know that some recommend beginning as early as 1 month, and some at 6 weeks. I believe that a new mother and her new baby get along together somewhat better if they do not have too many changing situations arise which might upset both. At 1 month, or at 1 month to 6 weeks, the baby is just becoming settled on its solid foods, many other changes are taking place, and usually by 3 months both the mother and the baby have acquired enough assur-

ance and composure to withstand the trauma of the first immunizing injection. I have been using most recently the triple vaccine combined with polio vaccine for the first two immunizations, giving only the triple vaccine for the third and, as recommended, in 7 months giving the third polio injection. At the time of the third injection which brings the baby up to about 6 months, I give the smallpox vaccination. If it should happen to fall in the hot summertime I even wait until the third polio injection is due to give the smallpox vaccination. This seems to be reasonable since it is uncomfortable enough to have a sore vaccination on one's arm without having the temperature outside be about 110 degrees in the shade. As recommended, a fourth polio immunizing dose should be given within one year or at the end of one year, and a fifth one at the end of the second year. At the end of the second year I also give a booster injection of the triple vaccine and again at age 6 or just in the preschool age a booster of the triple vaccine. We are very fortunate in our county in having a required preschool physical examination, whether this is done by the private physician or by the county health officer. These preschool physical examinations are required before the first year in school, before the fourth year in school, and before the child enters the eighth grade. This gives us an excellent opportunity to continue immunizations and catch up on any physical defects which might have arisen in children in the intervening years. Usually at the time the child is ready to enter the fourth grade he is also in need of a triple booster and by the time he enters the eighth grade he needs either typhoid vaccine or a booster dose of tetanus toxoid.

There is still a question regarding the value of typhoid-paratyphoid vaccine. Although available information would imply that vaccination reduces the incidence of typhoid fever, other factors have been in question. In our community, which is about "fifty-fifty" urban and rural, I still recommend typhoid vaccine for the children who are going to be swimming in public pools



or drinking from water sources which might be in question. Here again I use the state's recommended dose schedule of one injection weekly for three doses then a booster every 2 years.

To return to the question of polio vaccine, it is my understanding from sources not yet in print that the mixture of triple vaccine and poliomyelitis vaccine as supplied as "four in one" is currently showing some decrease in its antigenicity. Therefore I believe that either two injections or mixing the vaccine immediately prior to the injection will be necessary. I think that in the very near future we will be fortunate enough to have an oral vaccine for polio, thereby eliminating some injections which are presently necessary. Until that time I think it most important that we see that the population in general, up to age forty and some even above, are immunized against poliomyelitis. In this respect the general practitioner is in an ideal situation. Most mothers and fathers are quite concerned about their children receiving polio vaccine as well as the other routine vaccines, but they do not take time to consider themselves. They never stop to think who might take care of the children should they become a victim of paralytic polio. It has also been my practice to see that each expectant mother receives as many polio injections as possible prior to the delivery, and in most instances at least two injections can be given. Very often the third can be given at the time of the 6 week check-up, or at the time of the 3 month check-up for the infant. Thus far I have had very few mothers refuse this, and more often than not the father also comes around for his polio injections.

The matter of records has always been quite a problem to me, and until recently I had some difficulty in finding a way in which the patient could keep some permanent record of his immunizations. This problem was solved very easily when I discovered that the state health department uses and supplies a very compact little immunization card. At the time of the initial injection, the date is inserted with the date for the next injection in small letters just below it. This can be kept as a permanent

record by the patient and can be used for future reference. On my own office treatment cards I have found it easier if I insert the notation of an injection on the patient's card in red ink.

Those of us in general practice will always be confronted with the problem of immunization against tetanus. I know of no good way to carry out a program of mass immunization other than the constant reminder which we might carry out in our day to day office practice. It has been my observation that patients will readily avail themselves of the opportunity to obtain tetanus immunization when they are presented with it. Certainly when it is necessary to give an individual tetanus antitoxin there is also the opportunity to begin the series of injections of tetanus toxoid. At present, with the new super-refined precipitated toxoids, only two injections are required. This is certainly so simple that we cannot afford to pass up this opportunity for protection, not only against tetanus but also against the reaction which might occur from tetanus antitoxin. I would like to recommend that a personal, if not a state wide campaign for the immunization of the general population against tetanus be carried out. This should be simple and I believe would be supported by individuals and industry throughout the state.

Just a word of comment about the use of gamma globulin. Certainly this is a most important substance in the prevention of epidemics of infectious hepatitis, as well as preventing measles during the first trimester of pregnancy. It is also beneficial in preventing measles in particularly young infants or in children below the age of 2 years where the disease carries its highest incidence of severe complications. It is also of considerable benefit when used in the children who are already debilitated from other diseases or tend to have upper respiratory complications. I do not usually try to prevent the disease, but give a modifying dose so the child may go ahead and obtain his immunity which will last the rest of his life. In this way he will not be likely to acquire the disease when it is least expected.

## SUMMARY AND CONCLUDING REMARKS

ALEXANDER D. LANGMUIR, M.D.,† Atlanta, Ga.

In discussion of the several excellent presentations, it would be worthwhile to emphasize that two quite separate points of view influence final decisions regarding immunization procedures. The pediatrician and the general practitioner are concerned with the individual patient. How best can he be fully protected? The health officer is concerned with the community. How best can the community be protected? The practitioner worries most about when to give fourth or booster doses. He already knows when to give the first series. The health officer, on the other hand, worries most about how to reach those segments of his population that have not yet had any immunizations. My background is that of the health officer, but I will endeavor to be objective.

Another general point to be made is the well recognized but often forgotten fact that immunization recommendations cannot be fixed and rigid. They must be adapted to local needs and situations. Also, they must be flexible to new discoveries, accumulating knowledge, practical experience, better formulations and unforeseen problems. These changes can certainly be confusing to practitioners in the field and even more confusing to the general public. Some confusion is an inevitable companion of progress.

The subject of poliovaccine is a good example of the problem. Think of the constantly changing recommendations and practices, but at the same time look at the progress, during the past six years, and anticipate the further progress to be made.

With regard to the immediate polio situation, it is strongly urged that use of the presently available and highly effective Salk vaccine be intensified. Experience since 1955 clearly reveals that the main problem in polio control is to reach those segments of the infant and preschool popu-

lation and the fathers of small children who have as yet remained unprotected. This is the philosophy of the present "Babies and Breadwinners" campaign.

The much talked about practice of giving an annual booster of polio vaccine to children each year seems to me to be a somewhat doubtful routine procedure. The recommended practice of giving a primary series of three doses, or in the case of infants four doses, followed by a booster one year later is well established. Abundant epidemiologic evidence supports its effectiveness. Additional boosters are indicated only for special reasons such as the occurrence of an epidemic, or travel abroad to areas of known high prevalence. Then whole families should receive booster inoculations. It is also recommended that children about to enter school for the first time might well receive a booster dose along with other immunizations due at that time. A routine annual booster, however, is doubtful clinical practice and certainly is contraindicated as a public health measure.

When the oral poliovaccines become available, which is expected soon, another valuable tool for the control of polio will be placed in the hands of the practitioner and the health officer. For some time the oral vaccines will be competitive with the formalin-inactivated vaccine. We can be assured that both will confer adequate protection if used in the recommended fashion. The oral vaccine will be uniquely practical for the control of threatened epidemics because of its rapid action, ease of administration and ready acceptability.

The continued routine use of typhoid immunization and re-immunization in many parts of the country is a practice that causes great worry to many health authorities. At one time there was probably considerable justification for its use, but with the great decline in the incidence of the disease and the great improvement in basic sanitation little indication remains. At least the priority for its use should be markedly lowered in favor of first attention to polio-

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†Chief, Epidemiology Branch, the Communicable Disease Center, Public Health Service, U. S. Department of Health, Education, and Welfare, Atlanta, Ga.



myelitis, whooping cough, diphtheria, tetanus and smallpox. These are all important and immunization should be produced in all infants and young children before they enter school.

Finally, a brief comment on influenza vaccine is in order. The experience with the great pandemic of influenza in 1957 demonstrated that this disease is still a great killer. Excess deaths over expected levels in 1957 and 1958 amounted to 80,000 persons. Most of these deaths occurred among aged or chronically ill persons who had less physiologic reserve to withstand the extra strain on the cardiovascular-respiratory system imposed by the influenza

virus infection. Influenza vaccine containing the new variant type A<sub>2</sub> virus has been shown to confer substantial protection against the disease. On the basis of this evidence the Public Health Service is recommending a nationwide program of immunization against influenza for the aged and the chronically ill. This is not conceived as a program calling for mass publicity or community clinics. Rather, it is thought that such immunization should become a part of good routine geriatric practice. The administration of influenza vaccine should be annual, in the late summer or early fall months, certainly before January 1, in the offices of private physicians.

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**The Exercise Test and Prognosis of Coronary Heart Disease. George E. Diamond, M.D. *Circulation* 24:736, 1961.**

Despite several studies the significance and prognostic value of the exercise tolerance test in coronary heart disease remains a controversial problem. This report from the Medical Department of the New York Central Railroad is a five year study of 153 operating employees with known or suspected coronary artery disease, who were examined with an exercise test to estimate their ability to continue working in a vigorous and responsible occupation. All men in this series did the same amount of exercise consisting of 40 ascents of the standard nine-inch step done as rapidly as possible, usually in 60 to 90 seconds. One electrocardiogram was taken immediately after exercise. Of the 153 tests 37 were positive and 116 were negative. The instance of myo-

cardial infarction during the five year follow-up period after the test, was approximately three times greater in those with a positive test and the death rate was almost double. Disability was not based on the results of the exercise test alone and therefore a change in occupation did not influence the results of this follow-up study. Dr. Diamond believes that the ischemic response in the exercise test indicates transient coronary insufficiency and has prognostic implications of statistical significance in a large group. The application of these prognostic implications to a given individual is limited by the frequency of false negative tests and the presumed ability of collateral circulation to compensate for coronary artery insufficiency. (Abstracted for the Middle Tennessee Heart Association by O. A. Couch, Jr., M.D., Nashville.)

Interest in tissue sensitivity has extended into many fields as the result of current investigations in the pathogenesis of the so-called collagen diseases. The ramifications in many forms of disease are almost limitless. This report of two cases of probable sensitivity of ocular tissues is thus of interest.

## Ocular Hypersensitivity Reaction During Systemic Antituberculosis Treatment\*

A. R. DEUTSCH, M.D. and WM. M. ROWLETT, M.D., Memphis, Tenn.

The ability of the ocular tissue to react allergically to soluble fractions of the tubercle bacillus without actual tissue invasion or proliferation of the organism is well known. Manifestations of hypersensitivity to products of the tubercle bacillus in the absence of direct infection might occur in the form of anterior uveitis and phlyctenular keratoconjunctivitis. Exacerbations of uveitis and neuroretinitis after testing or therapy with tuberculin have been observed. Moreover, it has been found that the destruction of tubercle bacilli by means of chemotherapy apparently liberates sufficient antigen to cause focal allergic reactions which subside if chemotherapy is stopped.

Animal experiments and clinical observations have shown that local production of antibodies is stimulated within the eye by contact of the tissues with either an infectious antigen or by sterile protein. Once such a local concentration of antibodies persists for an indefinite period, the titer in the aqueous exceeds the titer in the blood plasma, and thereafter makes the eye especially vulnerable to an antigenic challenge of various origins. In recent years various reactions have been observed following the use of the many potent new drugs. Rich and his associates<sup>1</sup> found typical vascular lesions of polyarteritis nodosa in patients who died of hypersensitivity reactions and the same was true for experimental serum sickness. In the therapy of tuberculosis with streptomycin, para-aminosalicylic acid isoniazid (PAS) and isoniazid

many instances of intolerance to these drugs have been observed, PAS being the main offender.

This was the reason, even in 1954, that Houghton<sup>2</sup> advised a combination of chemotherapy and hormone therapy in the treatment of tuberculosis. The potential hazards of such a combination therapy were thoroughly tested by Woods and collaborators.<sup>3</sup> He studied the rational underlying the use of corticosteroids with antibacterial medication. There was not only a decrease of the allergic reactions to the tuberculin, but also a suppression of early phagocytosis of bacilli which made them more vulnerable to the action of antibacterial agents and promoted bacteriolysis and so favored their actual destruction. However, in experimental tuberculosis a high incidence of recurrence was observed, and these recurrences were more severe than the original disease. This fact was explained by the reduction of the inflammatory reaction by cortisone, retarded mobilization of the larger macrophages and a slowing down of fibroblastic activity. This depression of the defense factor left some living bacilli when treatment was discontinued. The bacilli multiplied and the assault at this time was greater than the previously acquired immunity could stand. Similar rebound phenomena were also observed in clinical practice, unless a very exact balance between chemotherapy and corticosteroids were observed.

Ocular hypersensitivity reactions in response to OT skin tests have been described frequently. Optic neuritis, as an isolated sign or together with a generalized embarrassment of the nervous system has been observed and diagnosed as a toxic mani-

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\*Read at the meeting of the Tennessee Academy of Ophthalmology and Otolaryngology, April 11, 1961, Chattanooga, Tenn.



festation to isoniazid, in sporadic cases. Hypersensitivity reactions of the retina and optic nerve during systemic antituberculosis treatment apparently are much rarer. We had the opportunity to observe 2 patients who developed severe lesions of the posterior segment of both eyes during chemotherapy for tuberculosis. We considered the possibility of a hypersensitivity reaction as the cause of this severe but fortunately transitory disease.

**Case 1.** Mr. J. E. W., 38 years old, gave a history of having had recurrent, temporarily severe, eye inflammation since 1955, for which he was treated by injections of tuberculin for a period of about 2 years. He also used cortisone drops on and off during this period. When seen in April 1960, he had a bilateral nodular scleritis with adjoining marginal interstitial corneal infiltrations. The aqueous was remarkably clear and the fundi were normal. The intra-ocular tension equaled 15.9, both eyes, (wt.5.5) mm.Hg. His corrected vision equaled: right eye — 1.25 = 2.50 x 110 = 20/20; left eye — 1.00 = +3.75 x 85 = 20/30. A very detailed physical examination was reported negative, except for a 4+ reaction to the Mantoux test in dilutions of 1:100,000.

Antituberculous treatment with PAS 20 Gm. daily in divided doses and isoniazid (Nydrazid) 300 mg. in divided doses was started and well tolerated. Mr. W. also took one Allbee tablet (a vitamin compound) a day and continued cortisone locally. Improvement was slow but continuous. The local use of cortisone was gradually reduced and finally stopped after 6 weeks. At this time liver function tests were negative.

On Nov. 25, 1960 the patient returned to the

office complaining of an impairment of vision. There were no signs of a recurrent inflammation in the anterior segments of the eye and the media were clear, except a haziness in the deep vitreous. The optic disk of the right eye was very edematous, especially in the superior half. There was distinct tortuosity of the dilated veins. The superior retina was so edematous that the superior branches of the arteries and veins appeared to be buried in some places within the edematous area. Between the two main branches of the superior retinal arteries were several small cottonwool patches and many small flame-shaped and blot hemorrhages. The corrected vision was 20/40. The peripheral field was normal. A large nerve fiber scotoma below was traced on the tangent screen (2/1000). (Fig. 1.) The fundus picture of the left eye was entirely different. The disk was only mildly edematous. There was tortuosity and dilatation of the veins. Many of the branches of the retinal arteries showed nodular yellowish thickenings, apparently in their walls, though between the nodules the walls appeared transparent. The corrected vision was 20/30; the peripheral field was normal and no scotoma could be found on the tangent screen (2/1000). Unfortunately it was not possible to make any blood studies or other laboratory tests, except for WBC and differential counts, which did not show an increase in eosinophils.

ACTH (Corticotropin-gel) 40 units and dexamethasone (Deronil) 4.5 mg. daily in divided doses were started. Chemotherapy was continued. Allbee, which contains only 5 mg. pyridoxine Hcl. was replaced by Hexabetalin, which contains 25 mg. pyridoxine. A low salt diet and regular check on weight and blood pressure were advised. No improvement was seen during the first week, but a remarkable change occurred

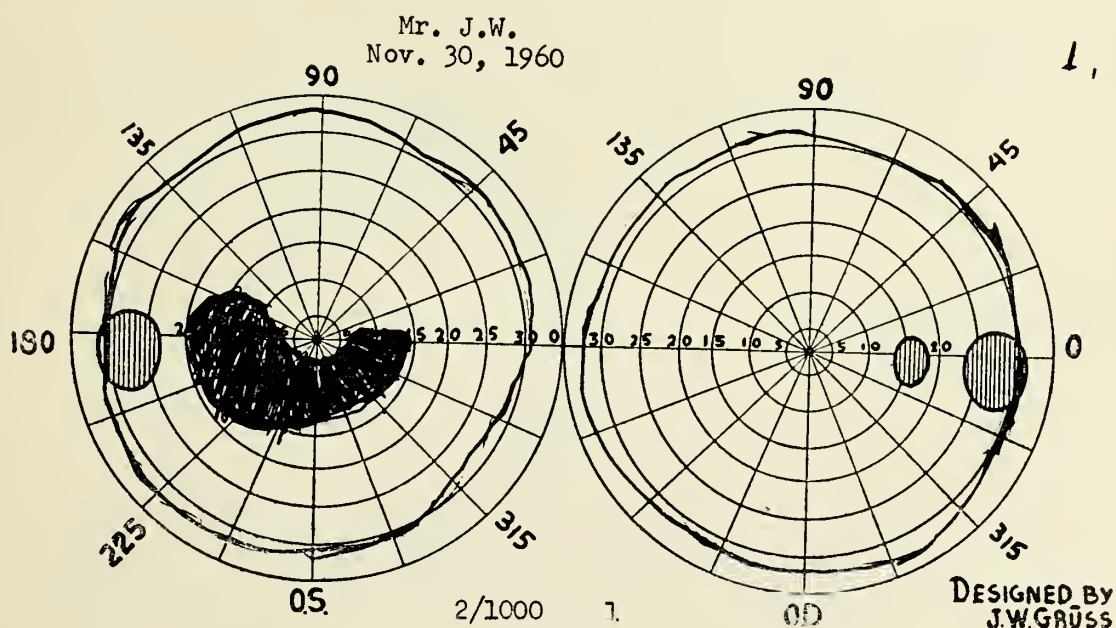


FIG. 1.

during the second week in the left eye where most of the yellowish plaques in the arterial walls had disappeared, leaving dull appearing localized sheaths. The ACTH and dexamethasone were gradually reduced and a maintenance dose of Corticotropin-gel, 10 units every 2 weeks, and dexamethasone, 0.75 mg. a day, were continued. The fundus lesions of the right eye regressed very slowly, starting with a decrease of the retinal edema, followed by a reduction of the papillary edema. When seen last, Feb. 18, 1961 there was still diffuse haziness of the superior retina, and folds of the internal limiting membrane and several cottonwool patches and hemorrhages were present. However, no scotoma could be traced at this date and the corrected vision was 20/20. There also was no metamorphopsia present.

**Case 2.** O. M. D., a 29 year old Negress, was referred to the Memphis Eye Ear Nose and Throat Clinic from the West Tennessee Tuberculosis Hospital where she was under treatment for a tuberculous abscess of the left anterior chest wall. The diagnosis was established by pathologic examination and guinea pig inoculation in May, 1960. A regimen of treatment was begun on June 15, consisting of isoniazid 300 mg. and PAS 12 Gm. a day, in divided doses, along with multivitamin capsules (containing 1.0 mg. of pyridoxine) and supportive measure. Streptomycin, 1.0 Gm. per day, was given for 14 days, following debridement of the abscess site on June 27.

When first seen in the eye clinic on Aug. 8, 1960, she presented with complaints of "a growth on the right eye and blurred vision." A complete eye examination revealed mild hyperemia of the bulbar conjunctiva, O.U. and medullated nerve fibers at the superior pole of the optic disc, O.D. Her corrected vision was: O.D. = 20/20 and J 1 with —.50S — 75 Cx 180; O.S. = 20/20 and J 1 with —.50S. She was given zinc sul-

phate (0.25%) drops t.i.d. and asked to return if symptoms were not alleviated. Upon her return, Aug. 29, she was noted to have mild edema of the perilimbal area in addition to hyperemia of the bulbar conjunctiva, but negative findings otherwise. Accordingly Neo-Hydeltrasol (prednisolone and neomycin) solution was prescribed and a diagnosis of allergy entertained. On her next visit, Sept. 13, she complained of a gross decline in visual acuity which had taken place over the preceding week. Vision was found to equal O.D. hand movements and O.S. finger counting at 4 feet. Funduscopic examination revealed considerable swelling of the disc with blurred margins, dilated veins, and generalized retinal edema, O.U., O.D. more marked. When examined on Sept. 16, she was noted to have flame-shaped hemorrhages and scattered areas of soft yellow exudate in addition to the previous findings. A diagnosis of retinopapillitis was made, due to allergy or toxicity to antituberculous treatment, with the former the probable because of an absence of other toxic manifestations (rash, fever, dizziness, headache, arthralgia, exfoliative dermatitis, sensory disturbances, etc.).

Vigorous therapy was instituted consisting of ACTH gel 40 units intramuscularly, and prednisolone 40 mg. per day in divided doses, with no alteration in the antituberculous regimen. Pyridoxine was increased to 100 mg. daily. A dramatic improvement in vision occurred over the following week, with visual acuity measured at O.D. 20/100, J 12, and O.S. 20/60 J 10 on Sept. 23. The fundus revealed a decrease in swelling of the optic nerve and venous dilatation; however, an inferior detachment involving the lower fourth of the right retina was observed, with a maximal elevation of 4 to 6 diopters. ACTH gel, 40 units intramuscularly per day, was continued, while the prednisolone dosage was gradually reduced

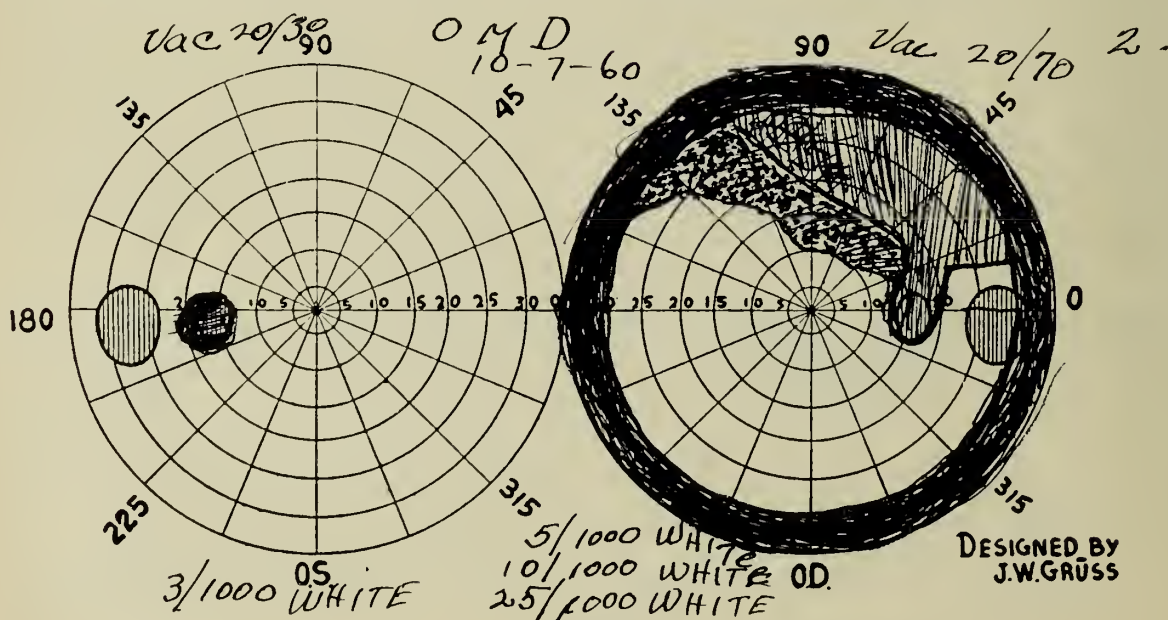


FIG. 2.



to a maintenance level of 10 mg. per day. Improvement continued, and on Oct. 7 the vision had increased to O.D. 20/70 — J 10, O.S. 20/30 — J 1; the optic nerve swelling had completely subsided, the detachment settled, the veins had returned to a normal caliber, and the exudates had been resorbed. (Fig. 2.) Only scattered traces of the flame-shaped hemorrhages remained in O.D., but a metallic shimmer of the entire lower retina was noted and retinal folds remained in the area of the detachment. The left fundus appeared normal. When examined on Oct. 28, the right fundus was normal except for the metallic shimmer and retinal folds, and these had disappeared by Dec. 16. (Figs. 3 and 4.)

Visual acuity returned to 20/20 — J 1, with correction, on Nov. 18. ACTH dosage was reduced to 20 units per day on Oct. 12, and discontinued on Oct. 28, while the prednisolone was first decreased and then discontinued on Dec. 11. The patient complained only of flashing lights in the field of the detachment, and had no return of her other symptoms, when examined last, Mar. 10, 1961.

#### Comment

The problems of hypersensitivity reactions are so complex that it is practically impossible to ascertain the trigger mechan-

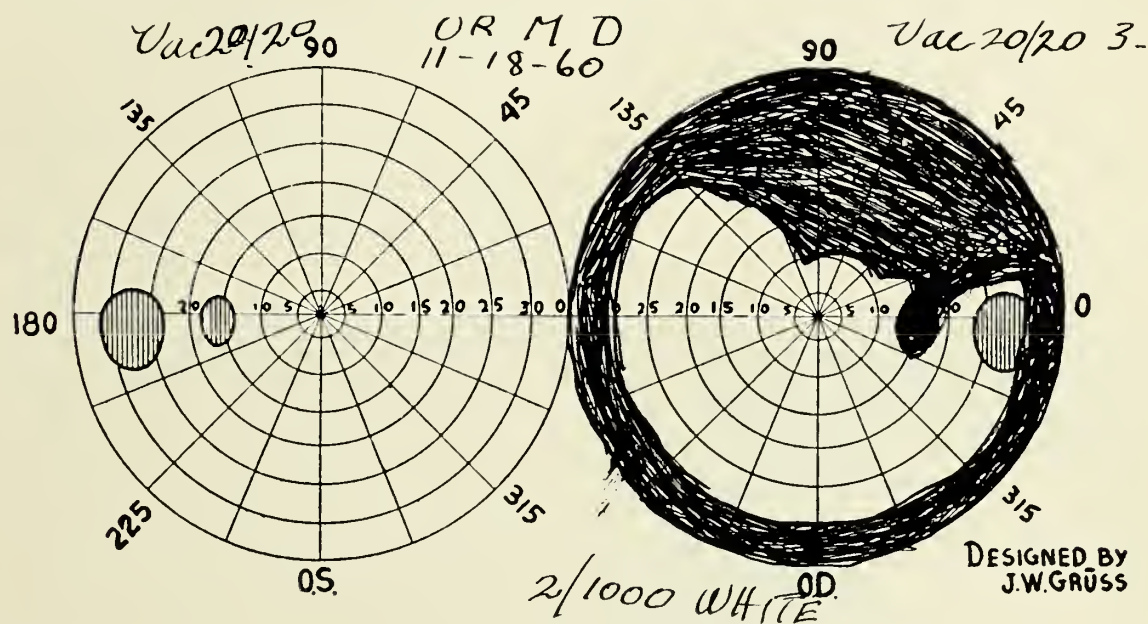


FIG. 3.

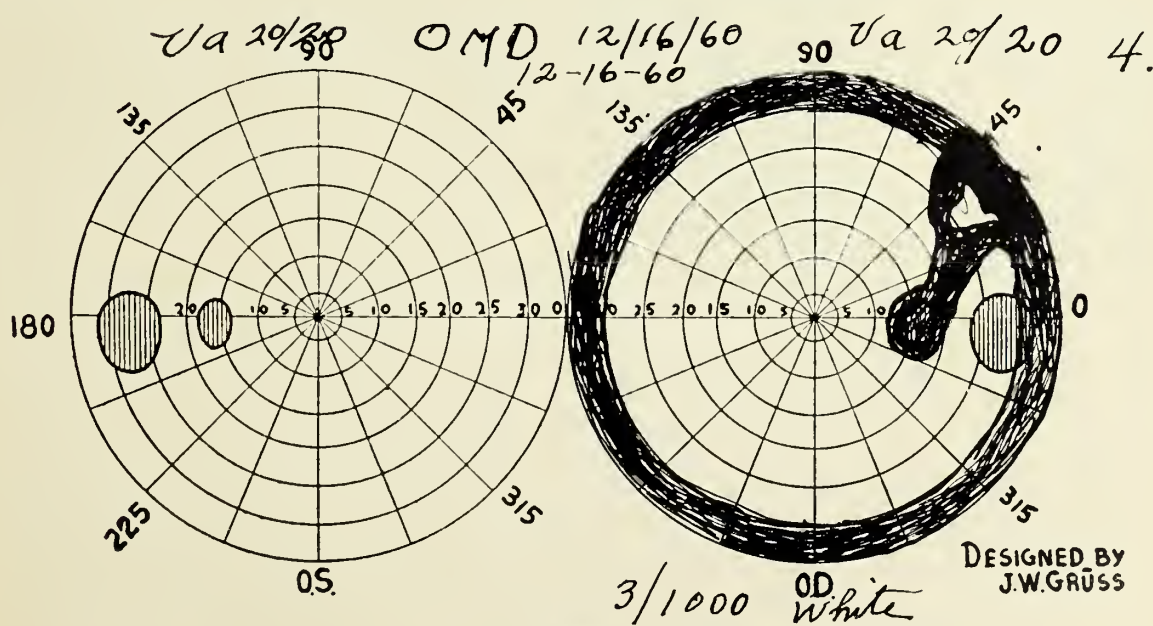


FIG. 4.

ism in specific cases. The abundant vascular supply of the uvea appears to be a factor in the local production of antibodies. A foreign nonantigenic substance, hapten, with an endogenous protein may modify protein and make it antigenic, or an endogenous factor may be the hapten and the exogenous factor the protein. Nonantigenic polysaccharides also may be converted to full antigenicity by various agents. Super-vening hypersensitivity angiitis is an acute necrotizing inflammation causing severe permanent damage, unless the allergic insult is halted in time. The clinical picture in the cases described might be referred to focal retinal and choroidal vascular reactions in sensitized individuals, and by a lowered resistance of the interfibrillary ground substance of several ocular tissues to noxious agents. Such changes in the ground substance have been found to be similar to those of the systemic collagen diseases. They have also been found in polyarteritis of drug-reactions and drug-

intolerance. Steroid therapy "covered" by effective antibiotics therefore seems to be justified. It has been promoted by many authors and advised for tuberculosis treatment of various organs.

#### Summary

- 1.) Two case histories of severe hypersensitivity reactions of the retina and optic nerve during systemic antituberculosis treatment have been described.
- 2.) The optional use of a combination of chemotherapy with corticosteroids, its justification and potential dangers were discussed.

#### References

1. Rich, Arnold R.: Hypersensitivity in Disease. Harvey Lecture Series XLII, 1946-1947, pp. 106. (A summary of a number of papers.)
2. Houghton, L. E.: Combined Cortitrophin and Chemotherapy in Pulmonary Tuberculosis, *Lancet* 1:595, 1954.
3. Woods, A. C., et al: Studies in experimental Tuberculosis. *A.M.A. Arch. Ophth.* 59:559, 1959.



## CASE REPORT

### Carcinoma of Head of Pancreas Simulating Duodenal Ulcer With Obstruction

J. Lynwood Herrington, Jr., Nashville, Tenn.

Abnormal roentgen findings involving the upper gastrointestinal tract are rather frequently encountered phenomena in patients with carcinoma of the head of the pancreas. For the most part, these x-ray changes consist of mild to moderate extrinsic pressure defects on the gastric corpus, pyloric antrum and duodenal loop. At times the mucosal pattern of these organs may even be distorted to varying degrees by actual neoplastic invasion. However, in most instances the roentgen changes resulting from pressure defects by the pancreatic neoplasm account for little in the way of clinical symptoms referable to gastrointestinal function. Broadbent,<sup>2</sup> in a study of 76 patients with carcinoma of the head of the pancreas, found that x-ray changes were present involving the second portion of the duodenum in 79.2% of cases. Mucosal changes were noted in the stomach in 20.7%, and structural changes were present in the duodenal bulb in 24.5%. When obstructive symptoms do occur, they usually result from tumor invasion or marked pressure encroachment on the distal duodenum. The presence of pyloric or duodenal bulb obstruction resulting from a pancreatic neoplasm is an unusual, but by no means a rare finding. Marshak<sup>5</sup> reported 4 patients with marked duodenal obstruction, in which the obstruction occurred in the second portion of the duodenum in 3 cases, and the remaining patient presented with pyloric obstruction. In addition, the latter patient had a 20 year clinical history of duodenal ulcer, which added further to the problem of diagnosis. Broadbent<sup>2</sup> mentioned 3 patients in whom pyloric obstruction was a prominent clinical and roentgenologic feature.

The vast majority of the recorded cases of pyloric obstruction resulting from carcinoma of the head of the pancreas have appeared in the journals of radiology and gastroenterology.<sup>1-6</sup> The surgical literature has dealt only sparingly with this important feature of the disease. The presence

of obstruction of the pylorus or duodenal bulb resulting from carcinoma of the head of the pancreas may at times present a difficult diagnostic problem.

The purpose of the present communication is to cite such a case that presented with the clinical and radiologic picture of acute pyloric obstruction. The preoperative impression was obstruction due to duodenal ulcer, and at subsequent laparotomy the differentiation between an obstructing duodenal ulcer with secondary pancreatitis and that of carcinoma of the head of the pancreas posed a difficult problem in diagnosis and management.

#### Case

E. T. A 41 year old man was admitted to St. Thomas Hospital Nov. 5, 1956, with a 6 month history of upper abdominal discomfort. A gastrointestinal series had been ordered by his physician shortly after the onset of pain, and the roentgen findings demonstrated a deformity in the duodenal bulb suggestive of duodenal ulcer. (Fig. 1.) The C-loop of the duodenum was de-



FIG. 1. Barium study demonstrates a deformity of the duodenal bulb and slight widening of the duodenal loop.

scribed as perhaps slightly enlarged, but this was thought to be normal as such findings are frequently seen in patients with a high-lying stomach and with an excessive deposition of retroperitoneal adipose tissue. The epigastric discomfort persisted in spite of medical management and during the ensuing months increased in severity. Two weeks before admission marked nausea and vomiting occurred, after which the patient was referred to the hospital. When first seen by us he was in moderate distress. A 30

pound weight loss had occurred during the few weeks prior to admission. A hypokalemic alkalosis was present. Blood counts were within normal limits. The serum amylase was elevated to 260 units.

Following replacement of fluid and electrolytes, a gastrointestinal series demonstrated rather pronounced pyloric obstruction. An incidental finding was a solitary calcification in the right upper abdominal quadrant, which was thought to represent a calculus in the gallbladder. (Fig. 2.) Serum



FIG. 2. Obstruction at the distal pylorus. An opaque shadow is seen in the right upper quadrant suggestive of a gallstone.

bilirubin, alkaline phosphatase, and total serum protein values were normal. The fasting free gastric acidity was 40 clinical units. The initial impression was pyloric obstruction, probably due to duodenal ulcer with secondary pancreatitis and cholelithiasis.

The patient was further prepared for operation and 24 hours before exploration it was observed for the first time that the sclerae had a slight icteric tinge. It was thought that he might have a common duct stone, or that perhaps the icterus could be explained on the basis of pancreatitis secondary to a penetrating ulcer. Another possibility was that the penetrating ulcer with surrounding edema and induration might be encroaching on the common bile duct. The possibility of the existence of a carcinoma of the head of the pancreas was not entertained.

**Operation.** When the abdomen was opened, both lobes of the liver appeared normal. There was a pronounced inflammatory reaction about the distal pylorus and duodenal bulb, and the head of the pancreas was somewhat enlarged and firmer in consistency than normal. A few small, soft-appearing lymph nodes were present in the infraduodenal area. Palpation of the duodenal bulb and pancreas between the operator's thumb and forefinger gave the impression that an ulcer

crater existed on the posterior duodenal wall. The gallbladder appeared thick-walled and contained numerous calculi. The common duct was dilated to twice normal caliber, but no stones were palpated along its length. It was thought that the patient had a large channel ulcer with secondary pancreatitis, producing compression of the distal common bile duct. It was elected to carry out a bilateral vagotomy and antral resection, along with cholecystectomy, ductal exploration, and perhaps T-tube drainage. Following completion of the vagotomy a 40 to 50% gastrectomy was undertaken, in which the stomach was first transected in about its mid portion and the antrum and distal body reflected to the right. As the distal pylorus and duodenal bulb were being freed from the pancreas, it was noted for the first time that a necrotic ulcer crater was present in the head of the pancreas overlying the reflected duodenal bulb, which appeared intact. The crater measured 1.5 cm. in diameter and represented the crater which had previously been palpated through the duodenal wall. It was at this point in the procedure that it first became apparent that one was dealing with a carcinoma of the head of the pancreas with encroachment on the pylorus and duodenal bulb. A frozen section confirmed the diagnosis of pancreatic adenocarcinoma. The distal resection was completed, the duodenal stump closed, and a posterior Hofmeister reconstruction established. The gallbladder was removed, the common duct sectioned, and the proximal end was implanted into the descending duodenum.

**Pathologic Report.** Microscopic sections revealed a well-differentiated adenocarcinoma of the head of the pancreas with invasion of the wall of the distal pylorus and proximal duodenum. The mucosa of the duodenum was free of apparent invasion by tumor and no evidence of benign duodenal ulceration was noted.

**Follow-Up.** The slight icterus cleared promptly following operation and the serum amylase values returned to normal. The hospital stay was uneventful, but the patient expired 8 months later as a result of the neoplastic process.

### Discussion

In two separate groups of patients having carcinoma of the head of the pancreas, Rives<sup>8</sup> found roentgen changes referable to the upper gastrointestinal tract in 40 and 60% respectively. Of 161 cases of carcinoma of the head of the pancreas studied at the New York Hospital (Cornell Medical Center), 32% showed roentgen abnormalities involving the stomach and duodenum. Twelve cases (7%) had pressure defects on roentgen examination of the distal stomach or proximal duodenum. In some instances these changes were suggestive of the presence of a gastric carcinoma, benign gastric



ulcer or duodenal ulceration. Larsen,<sup>4</sup> in an analysis of 50 cases, was able to demonstrate x-ray changes in approximately 33 per cent. Twelve of the 50 patients presented a deformity of the duodenal bulb. Kirklin<sup>1</sup> emphasized that pancreatic neoplasms with infiltration of the duodenum may produce roentgen signs suggestive of duodenal ulcer. Puestow<sup>7</sup> reported 6 patients among a group of 39 who had an actual duodenal ulcer present in association with pancreatic carcinoma.

The presence of clinical jaundice is a prominent feature in patients with carcinoma of the head of the pancreas, the incidence varying up to 92 per cent. It is of interest that White<sup>9</sup> recently reviewed 4 patients with acute duodenal obstruction due to carcinoma of the pancreatic head in which jaundice was absent in each case. It is readily apparent that such cases could present a difficult problem in diagnosis.

In the case under consideration the correct diagnosis was not entertained prior to exploration. The patient's symptomatology was compatible with a virulent channel type ulceration, and the recent weight loss and metabolic alkalosis are frequent accompaniments of pyloric obstruction associated with benign ulceration. The deformity in the duodenal bulb as demonstrated on the first roentgen study was quite characteristic of the usual type of duodenal ulceration. Perhaps, in retrospect, the demonstration of slight widening of the duodenal sweep was suggestive of a pancreatic neoplasm. However, this may be considered a normal finding in many instances. The age of the patient was of no aid in suggesting the correct diagnosis. It is of interest that the patient had a normal serum bilirubin level on admission to the hospital and slight icterus only became apparent just prior to operation. The icterus was thought to result from either a common duct stone or from secondary pancreatitis. At exploration, even with the duodenum and pancreas visualized, the correct diagnosis was not apparent. The neoplastic ulcer crater in the head of the pancreas gave the operator the false impression that the primary lesion was in the overlying posterior duodenal wall. Although the entire pancreatic head was slightly enlarged and

firm in consistency, the structure was not stony hard and did not readily suggest the presence of carcinoma on gross examination. It was not until the stomach had been divided and the distal portion reflected to the right that it became obvious that pancreatic carcinoma existed.

The clinician faced with such a problem should keep in mind that carcinoma of the head of the pancreas can mimic gastric or duodenal ulcer with or without obstruction. When doubt exists as to the true nature of the pathologic state of the pancreas, it is wise to perform a transduodenal biopsy of the pancreas and also to explore the interior of the duodenum for the presence of possible ulceration. A biopsy and immediate frozen section study of lymph nodes in the vicinity of the pancreas may also be of value. In our case, had the duodenum been opened and inspected prior to performing distal gastrectomy, the suspicion of pancreatic carcinoma would have been aroused and appropriate frozen section studies performed to either confirm or refute the diagnosis.

### Summary

Carcinoma of the head of the pancreas is associated with abnormal roentgen changes involving the upper gastrointestinal tract in a high percentage of cases.

The roentgen changes are located in the descending duodenum in the majority of instances.

Roentgen changes confined to the distal pylorus or duodenal bulb may, however, be produced by carcinoma of the head of the pancreas. These changes may be identical with those produced by primary gastric or duodenal ulceration.

A patient with pyloric obstruction due to carcinoma of the head of the pancreas is described, which presented a problem in roentgen and clinical diagnosis.

### References

1. Beeler, J. W. and B. R. Kirklin: Roentgenologic Findings Accompanying Carcinoma of the Pancreas, *Am. J. Roentgenol.* 67:576, 1952.
2. Broadbent, T. R. and H. D. Kerman: One Hundred Cases of Carcinoma of the Pancreas: A Clinical and Roentgenologic Analysis, *Gastroenterology* 17:163, 1951.
3. Chiat, H. and D. H. Faegenburg: Illusory

Neoplasms of the Stomach and Duodenum as a Manifestation of Carcinoma of the Pancreas, *Radiology* 74:771, 1960.

4. Larsen, K. A. and A. Pedersen: Roentgenologic Findings in the Stomach and Duodenum in Cancer of the Pancreas, *Acta radiologica* 45:459, 1956.

5. Marshak, R. H., D. A. Dreiling, and A. I. Friedman: Post-Bulbar Duodenal Obstruction in Carcinoma of the Pancreas, *Gastroenterology* 16: 680, 1950.

6. Poppel, M. H.: Roentgen Manifestations of

Pancreatic Disease. Charles C. Thomas, Springfield, Illinois, 1951.

7. Puestow, C. B., K. G. Wurtz, and G. A. Olander: Carcinoma of Ampulla of Vater and Head of Pancreas Causing Jaundice, *A.M.A. Arch. Surg.* 69:564, 1954.

8. Rives, J. D., S. A. Romand, and F. M. Sandifer: Carcinoma of the Pancreas, *Surg. Gynec. & Obst.* 65:164, 1937.

9. White, R. J.: Carcinoma of the Pancreas Presenting as Acute Duodenal Obstruction without Jaundice, *Ann. Surg.* 153:5, 1961.

**Cardiac Arrest: A Report of Application of External Cardiac Massage on 118 Patients.** James R. Jude, M.D., W. B. Kouwenhoven, Dr. Ing, and G. G. Knickerbocker, M.S.E., Maryland State Med. J. 10:398, 1961.

This report from the department of surgery at the Johns Hopkins University School of Medicine and Hospital, deals with a new method of producing artificial circulation by external sternal compression. The major requirement in cardiac resuscitation is rapid diagnosis followed by immediate reinstitution of the oxygenation system by artificial means. Only three to five minutes are available before irreversible brain damage occurs. Procrastination for absolute proof of diagnosis has often been prolonged to dangerous limits before using open chest cardiac massage. With external massage no delay is necessary. Immediate application of cardiac massage, in association with mouth-to-mouth respiration, might permit resuscitation of many individuals outside the operating room. To perform external massage the heel of the hand touches the lower part of the sternum and pressure forces the sternum inward one and a half to two inches. Sixty to eighty compressions per minute are carried out. In this series 30% of the arrests were in the form of ventricular fibrillation and 70% were in asystole. Cardiac action was restored in 78% of the cardiac arrests, and in 60% the pre-arrest status of the central nervous system and heart was regained. Twenty-four percent of the patients survived and left the hospital.

There are definite indications and contraindications for this resuscitative method. The cardiac arrest should be sudden and unexpected. The patient should not be in the terminal stages of chronic disease. The time limits following the arrest should not be greater than three to five minutes.

Following restoration of circulation it may be necessary to maintain it with drug therapy. If evidence of brain damage is present, hypothermia should be used for periods up to seventy-two hours. Fractured ribs, pneumothorax, subcapsular hematomas of the liver, fractured sternum, laceration of the inferior vena cava and bone marrow emboli to the pulmonary arteries, have been complications of this method. It is difficult to compare the results of resuscitation with internal cardiac massage with those of external massage. However, the author's experience with open chest massage away from the operating room provided no survival except in the emergency room and recovery room areas, whereas this method has produced such survivals. This simplified technic of cardiac resuscitation is available to anyone, at anytime, and in any location. Appropriate training of rescue and first-aid squads, when coupled with follow-through therapy by a physician, may give victims of electrocution, drowning, suffocation, myocardial infarction and drug reactions a second chance. (Abstracted for the Middle Tennessee Heart Association by O. A. Couch, Jr., M.D., Nashville.)



## CLINICOPATHOLOGIC CONFERENCE

### Carcinoma, Common Bile Duct\*

Z. B. Barnes, M.D. and H. Bernhardt, M.D.

This was the first admission to this hospital of this married, 39 year old negro shoe repairman who stated that he was well until 3 weeks prior to admission. At that time he experienced gradual onset of postprandial discomfort characterized by regurgitation of food and a yellow, bitter tasting liquid about two or three hours postprandially. The regurgitated material usually contained food eaten at the recent meal, but sometimes contained food from several days before. One week prior to admission he noticed postprandial nausea without pain and a sensation of choking. He would induce vomiting and would achieve considerable relief. Further history also revealed that the patient had drunk whiskey fairly heavily for the past 15 years and had used to a considerable extent homemade and illegal alcoholic beverages.

**Physical Examination.** At the time of admission, physical examination revealed a normotensive, well developed, nourished, and hydrated negro in no apparent acute or chronic distress. There was injection of the conjunctivae. ENT. examination was negative. Lung fields were clear to percussion and auscultation. Examination of the heart revealed no murmurs or rubs and normal size. Abdominal examination revealed no enlarged organs, palpable masses, or tenderness and no herniae. There was atrophy of the right testicle. Stool was negative for occult blood. There was no vertebral and only slight right costovertebral angle tenderness and no significant lymphadenopathy.

**Laboratory Data.** The admission hemogram showed 10,200 WBC. count with 74% neutrophils, 24% lymphocytes, 2% monocytes; 6.01 million RBC. 17.0 Gm.% Hgb., and hematocrit of 53%. Hemoglobins ranged from 11 to 15 Gm.% and hematocrit from approximately 32 to 55%, these fluctuations probably being accounted for largely by state of dehydration. Platelet and reticulocyte counts were normal. Repeated urinalyses during course of hospitalization showed a specific gravity ranging 1.009 to 1.020, intermittent mild albuminuria and initially an occasional mild pyuria, although during latter part of hospitalization urinalyses consistently showed marked pyuria. Serologic tests for syphilis were negative. Initial urine culture showed *Gaffkya tetragena*, but later in hospitalization urine culture showed *Enterococcus* species, *Pseudomonas aeruginosa*, *Aerobacter Klebsiella* species and *Paracolon* "29911." A blood culture shortly before death showed *Strep. viridans* and a proteus species. BUN. on admis-

sion was 54 mg.%. During the course of hospitalization the BUN. ranged from 34 to 93 mg.%, and just before death was 60 mg.%. The initial serum electrolyte studies showed sodium 132, potassium 3.0, CO<sub>2</sub> 49 and chloride 55 mEq/L. Subsequently, the electrolyte pattern fluctuated between this extreme hypopotassemic, hypochloremic alkalosis and normalcy, depending on the severity of vomiting and the success of replacement therapy. However just before death a hyperpotassemia of 6.2 mEq/L. with slight acidosis, the CO<sub>2</sub> being 20.5 mEq/L. was noted for the first time. The first liver function profile, which was done 2 weeks after admission, showed a total serum bilirubin of 2.36 mg.% with a 1 min. fraction of 1.25 mg.%, serum cholesterol of 184 mg.%, serum alkaline phosphatase 6.1 Bodansky units, thymol turbidity 1.0 units, prothrombin time 100%, negative cephalin flocculation, 40.5% BSP. retention after 45 minutes, negative urine bile and urine urobilinogen of 22.88 mg./24 hours. Serum bilirubin rose to a high value of 12.30 mg.% with a 1 min. fraction of 7.89 mg.%, but had fallen slightly just before death. Serum alkaline phosphatase was 14.5 Bodansky units, but shortly before death had fallen to 5.1 Bodansky units. Cephalin flocculation and thymol turbidity remained normal although prothrombin time decreased to 31%. Later, the urine was positive for bile and "negative" for urobilinogen. Serum albumen was 3.9 Gm.%. Serum globulin 2.8 Gm.% early in hospitalization, but near the end of hospitalization albumen was 2.9 Gm.%, globulin 3.6 Gm.%. PPBS 111 mg.%. Stool cultures were negative for enteric pathogens.

**X-Ray.** Chest X-ray on admission was negative. Upper GI series was interpreted as normal. Esophagram showed a slight protrusion of gastric mucosa through the hiatus. KUB. studies showed no definite abnormalities. Skull x-rays showed no evidence of increased intracranial pressure or other abnormality. Electrocardiogram was interpreted as normal.

**Hospital Course.** At the time of admission he was placed on a bland liquid diet. However, he began vomiting, and his elevated BUN. continued to rise. He received thorazine for about ten days. However, he continued to vomit and vomited considerable amount of dark brown 4+ guaiac material. Despite correction of his electrolyte difficulties the clinical picture did not improve, and he continued to go downhill, putting out an alkaline urine of low specific gravity. On about the 13th hospital day the possibility that water intoxication had occurred was considered, and fluid intake was decreased. However, his confusion continued as did his vomiting, and he became quite difficult to manage, pulling out catheters and stomach tubes. Jaundice was noted about this time and documented by an elevated alkaline phosphatase and total serum bilirubin, both fractions of the latter being elevated. Other liver function tests were normal. Because of persistent vomiting with inability to maintain nutrition and hydration a polyethylene catheter was inserted

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into the left iliac vein, and parenteral fluids were administered in an effort to correct the electrolyte deficiency. However, nutrition and satisfactory electrolyte balance could not be maintained because of his persistent vomiting. About 2 weeks before death he developed a remittent fever with fluctuations between 101 and 106 degrees rectally, which was not responsive to a variety of antibiotics including penicillin, streptomycin, chloramphenicol and furadantin. Terminally, he developed frequent convulsive seizures of the Jacksonian type involving the left extremities, and he expired following a series of three convulsions. His hospital course covered about six weeks.

DR. Z. B. BARNES: Since vomiting was such a prominent feature of this man's illness, I would like to discuss briefly some of the possible causes relative to this case. I think that we can rule out disease of the esophagus. Conditions that might induce vomiting through a central mechanism include uremia, liver disease, acute infections, Addison's disease and various metabolic disturbances. This patient was certainly uremic, but I think that the uremia was secondary to the vomiting. The jaundice and septicemia may have contributed to the vomiting, but were not primarily responsible. Classically, pyloric or duodenal obstruction produces this type of vomiting and electrolyte imbalance. Other gastric causes producing a reflex type of vomiting include alcohol and gastric irritants. We know that this patient consumed a large amount of home-made whiskey, but it is difficult to attribute such severe vomiting to this, particularly since symptoms persisted and probably became more intense following admission. Intra-abdominal lesions such as intestinal obstruction, peritonitis, biliary and renal colic, pancreatitis, and acute inflammatory conditions such as appendicitis manifest vomiting in varying degree, but the absence of pain and a negative physical examination rule out most of these possibilities. Chronic hypokalemia producing ileus could have been a contributing factor. Various organic lesions of the central nervous system, particularly space-occupying lesions, are known to produce vomiting secondary to increase in intracranial pressure, but electrolyte imbalance secondary to this type of vomiting rarely if ever occurs. I am impressed that we are dealing with an organic lesion and believe that we can rule out functional or hysteri-

cal vomiting because of the severe electrolyte disturbance and other developments in this case. Despite the fact that the GI series is reported as negative, it is difficult to believe that the cause of vomiting in this case could be due to any lesion other than one which would cause duodenal or pyloric obstruction.

I would like to briefly comment on the profound electrolyte disturbance which is a classical example of the hypokalemic alkalosis seen in pyloric or high intestinal obstruction. The mechanism is a loss of large volumes of chloride and potassium with lesser amounts of sodium, as gastric and intestinal juices are vomited. Because of the chronic hypokalemia, renal tubular function is impaired and one may see a urine with a low fixed specific gravity such as this patient presented. Also because of renal impairment as well as dehydration, the BUN rises. In order to correct such an electrolyte disturbance, large amounts of potassium in addition to sodium chloride must be given. The fact that this patient was extremely disoriented and had a persistent, refractory metabolic alkalosis is easily explained on the basis of chronic potassium deficiency. Other causes of metabolic alkalosis which should be mentioned are adrenal cortical hyperfunction, chronic diarrhea which is seen occasionally in those who habitually take laxatives, rare chronic renal lesions such as polycystic disease of the kidneys, and chronic glomerulonephritis. None of these conditions, however, are known to produce severe vomiting and this is certainly not the picture of aldosteronism. On admission, this patient's renal function was reasonably good, rather incompatible with chronic renal disease, and we have no past history suggesting polycystic kidneys or glomerulonephritis.

Despite the negative GI series, I think that a discussion of lesions causing gastric or high intestinal obstruction is in order. Pyloric obstruction is most commonly due to chronic peptic ulcer or carcinoma, but there are a host of other lesions including benign tumors, foreign bodies, and extrinsic lesions compressing the pylorus which could cause obstruction. However, the x-rays of the stomach, presented a moment ago, show a perfectly normal stomach, except for some



possible dilatation, and there is no evidence of pyloric obstruction since the barium passes the pylorus and goes into the duodenum. It is interesting to note that the x-rays show no barium in the jejunum or small bowel and I believe that this is certainly significant. The duodenum may also be obstructed by a variety of lesions, the most common of which is duodenal ulcer. Other lesions are rather rare, but the most common of these would be a tumor. Rarely regional enteritis involves the duodenum. Any extrinsic lesion regional to the duodenum, such as metastatic tumor, aneurysm, pancreatic tumor, retroperitoneal tumors, and tumors of the right kidney or right adrenal can produce duodenal obstruction. Most of these can be excluded because of the absence of a mass in the abdomen. The superior mesenteric artery syndrome deserves mention, but of all of the cases that I have seen reported, none produced such an electrolyte imbalance and most all were marked by some degree of pain.

The jaundice which this patient presented was certainly typically obstructive jaundice characterized by elevation of the alkaline phosphatase and bilirubin with normal hepatocellular function tests. This is not the picture of cirrhosis of the liver, even though our patient was an alcoholic and might have some degree of underlying cirrhosis. With obstructive jaundice, it is difficult for me to interpret the BSP. retention of 40 per cent. The chronic malnutrition, as well as prolonged biliary obstruction, would certainly explain the low prothrombin time and reversal of the AG ratio seen later in the hospital course. The causes of biliary obstruction are chiefly gallstones and tumors, the latter either arising primarily from the biliary tree or adjacent extra-ductal structures. All of the lesions which were listed as causes of duodenal obstruction might also cause obstruction of the common bile duct. We have no history or findings which suggest gallstones. What about the possibility of Thorazine producing this patient's jaundice? The literature contains numerous reports of Thorazine hepatitis with a typical obstructive jaundice liver profile and at times necessitating laparotomy because the surgeon could not differentiate it from biliary obstruction due

to stone or tumor. The fact that the alkaline phosphatase returned to normal and the jaundice slightly subsided terminally, it is more in favor of jaundice being on the basis of Thorazine rather than a malignancy.

The terminal event in this case was undoubtedly due to a septicemia from some focus, such as pyelonephritis, septic thrombus at the site of the venous catheter, or possibly an ascending cholangitis. The fever and convulsions are easily explained on this basis. However, we are faced with the perplexing problem of explaining the gastrointestinal obstruction and jaundice. I believe that the x-rays, despite the negative interpretation, indicate a lesion probably in the second portion of the duodenum. The most likely lesion would be a malignant tumor, but we cannot rule out the possibility of a benign lesion. The most common malignant tumor of the duodenum is an adenocarcinoma and these may be located anywhere in the duodenum and adjacent to the ampulla of Vater. I believe that we can rule out carcinoma of the head of the pancreas because of the jaundice following the obstruction and because the stomach is not obstructed. It is also unusual for the jaundice to subside to any degree when obstruction is due to a tumor in the head of the pancreas. It would be very unusual for a carcinoma of the ampulla of Vater to cause a duodenal obstruction although such a tumor obstructing the bile duct might slough and allow the jaundice to slightly recede. Although we cannot exclude any benign lesion of the duodenum, I am going to make the diagnoses of primary tumor of the duodenum, probably malignant; Thorazine hepatitis; pyelonephritis; and thrombosis of the left iliac vein, possibly septic.

D. H. BERNHART: At autopsy, the principal organs and systems involved were: the duodenum, biliary tract, heart, spleen, brain and liver.

The heart weighed 340 grams. There were friable vegetations on the mitral valve measuring up to 1.5 cm. in length and up to 1 cm. in diameter. In the region of the head of the pancreas there was a firm mass of tissue which surrounded the common duct and involved the wall of the duode-

num, causing marked duodenal stenosis 3 cm. from the gastroduodenal junction (Fig. 1). The common duct, just above the am-

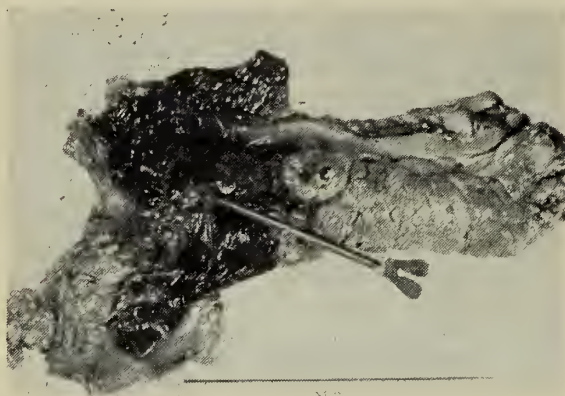


FIG. 1.

pulla of Vater, was constricted with proximal dilatation. The gallbladder was also markedly dilated and contained 50-60 cc. of dark green bile. The liver was enlarged and weighed 1800 grams and was dark green. The cut surface revealed many cystic areas in the left lobe of the liver, which were necrotic and filled with dark green bile (Fig. 2). The largest cystic area was



FIG. 2.

3.5 x 3 cm. The parenchyma was deeply bile stained. The spleen weighed 100 grams and at one pole there was a small reddish-white area, up to 1 cm. in greatest diameter. The brain weighed 1400 grams and there was a 1.2 cm. area of discoloration near the tip of the occipital lobe, with hemorrhage into the subarachnoid space in this area. There were also areas of softening and punctate hemorrhages in the occipital pole.

Histologically, the mitral valve showed areas of fibrosis with large bulbous vegeta-

tions projecting from the valve. The vegetations were composed of a homogeneous hyaline and fibrin network, bordered and infiltrated with many clumps of cocci (Fig. 3). There was extreme necrosis of the en-

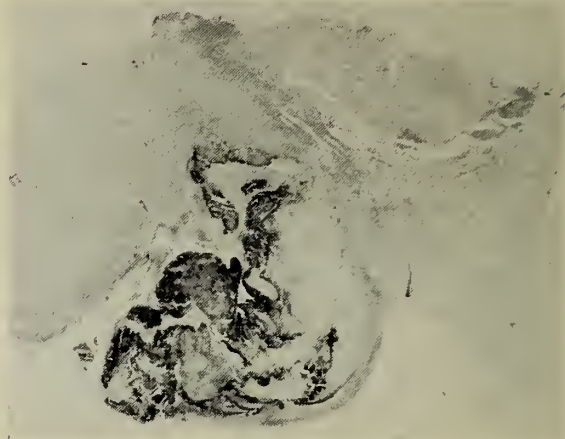


FIG. 3.

docardium and valve with extension of neutrophils and round cells into the myocardium with destruction of myocardial fibers. Postmortem cultures from the vegetations of the heart revealed *Staph. aureus*, coagulase positive, and a proteus species. Section of the spleen showed two thrombosed blood vessels containing numerous cocci with extensive infarction and necrosis and inflammatory infiltrate of acute and chronic nature in the surrounding parenchyma. Section of the common duct just proximal to the ampulla showed a markedly atypical mucosa with numerous anaplastic glands radiating outward from the mucosa into the surrounding muscularis. This appeared to be the original site of tumor which was invading the ampullary area, the duodenum, and head of the pancreas (Fig. 4). Perineural lymphatic and vascular invasion was prominent. In the liver there were many large areas of infarction and cystic areas of necrosis. In the center of the areas of necrosis there were many clumps of cocci. Numerous bile ducts were plugged with yellow bile pigment and bile lakes were present. Sections of the brain taken from the basal ganglia showed small, round areas of infarction and central necrosis containing clumps of cocci. Organizing and fresh thrombus material was seen in the hypothalamus and dentate nucleus. Areas of recent infarction with necrosis



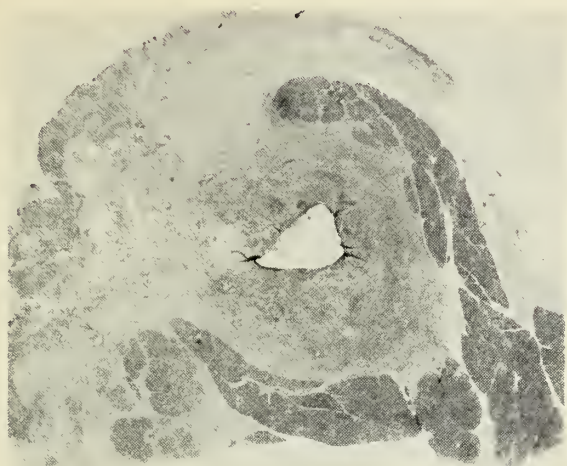


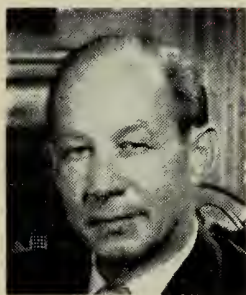
FIG. 4.

were present in the left occipital lobe associated with hemorrhage and neutrophilic and round cell infiltration.

#### Final Anatomic Diagnoses

1. Adenocarcinoma of common bile duct with involvement of ampulla of Vater, head of pancreas, duodenum, with duodenal stenosis, and with vascular and lymphatic and lymph node invasion.
2. Secondary obstruction of biliary system with marked dilatation of common bile duct, cystic duct and gallbladder.
3. Biliary necrosis and infarction of the liver with acute cholangitis and cholangiectasis.
4. Septicemia, secondary to Dg. 3.
5. Acute bacterial endocarditis, mitral valve, due to *Staph. aureus*, coagulase positive and *Streptococcus viridans*.
6. Multiple septic emboli with infarction of lung, spleen, liver, gallbladder, thyroid and brain.

## President's Page



WILLIAM O. VAUGHAN,  
M.D.

A few can make it difficult for many as well as, to use the old refrain, produce added damage to the image of medicine. I refer to abuses of a few physicians of insurance coverage, both from the standpoint of fees and hospital abuses.

We can hope that the individual physician would re-evaluate his own practice when the patient is covered by insurance, but unfortunately all do not.

Do we need to suggest some changes in the Tennessee Hospital Service Association? Not that this is the only insurance coverage involved, but one perhaps with which we are most closely associated in many ways.

I do not intend criticism but I should like to suggest that we might improve matters if, in place of the present Board composed of lay, hospital and physician members to govern both Blue Cross and Blue Shield, separate Boards were established. One Board could be established to be known as the Tennessee Medical Service Association for Blue Shield. Representatives on this Board would be physicians and lay members. Another Board for the THSA for Blue Cross coverage (hospitalization), composed of physicians and lay representatives, probably would prove to be effective.

Both services could be operated by the same administrative staff but with separate Board meetings and separate audits. Expenses could be shared for each service, based on experience.

If this were done, the Tennessee Hospital Service Association could give adequate study to over-utilization of hospital facilities and other similar abuses. The Tennessee Medical Service Association could better evaluate physicians fees and abuses.

The Tennessee State Medical Association should appoint members to the Tennessee Medical Service Association and an accounting should be made to the State Medical Association's House of Delegates. This could result in the Board investigating abnormal charges and would make it easily possible for the Tennessee Medical Service Board to investigate questionable areas.

Another area for study might relate itself to overall administrative expenses. If the administrative expenses of Blue Shield services and the Blue Cross services could be separately determined, a better analysis of coverage could be obtained. It also might make it possible to improve the coverage of the Tennessee Plan.

Such a plan as suggested should obviate some of the difficulties which now occur and perhaps make it possible to improve the services which we are now providing.

A handwritten signature in dark ink, reading "W. O. Vaughan". The signature is written in a cursive, flowing style.

President

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JANUARY, 1962

## EDITORIAL

### ALLERGY FROM THERAPEUTIC AGENTS

A large percentage of the complaints of patients, both in the hospital and in the office, are ascribable in part or entirely to the undesirable effects of various therapeutic agents. These undesirable effects may be due to intolerance to the particular drug such as sedation from antihistamines, epigastric burning from acetylsalicylic acid or tinnitus from quinine. With such intolerance reduction of the dose often permits continuation of therapy. Certain allergic effects of a drug, on the other hand, such as rashes, urticaria, asthma and rhinitis, simple purpura, anaphylactic shock and periarteritis are warnings that continued use of the drug may be fatal. Allergic reactions due to drug therapy have been reviewed recently by Samuel Feinberg.<sup>1</sup>

One of the most common types of drug allergy is that due to penicillin and its probable incidence is astonishing. It has been estimated that one-half of the popu-

lation of the United States (85 million) has received penicillin and that 3 per cent of these have had allergic reactions or a total of two and a half million reactions. Two kinds of reactions may occur. By far the most common is the "serum sickness type" or delayed reaction, which consists of urticaria, angioedema, fever, and occasionally albuminuria, neuritis and periarteritis. The prevailing opinion is that this syndrome is due to the interaction of the still uneliminated antigen with newly formed antibodies. It is therefore easy to understand how such reactions may occur after the first injection of penicillin and also that a preliminary skin test will not be positive. Treatment with antihistamines and in some patients corticosteroids is indicated in such delayed reactions. Penicillinase also may be helpful.

The second type of reaction is the immediate, and this usually occurs within seconds to an hour following administration of the drug. This is the most hazardous and it is reasonable to assume that several hundred deaths occur each year in the United States from such reactions.<sup>2</sup> The patient may experience any combination of symptoms from urticaria and rhinitis through unconsciousness, collapse and death. Since an immediate reaction implies previous contact with the drug, and since these patients frequently have a positive response to skin tests, awareness of these reactions may prevent such catastrophes. The physician should be alerted to look for the immediate reactions in, (1) those who have had penicillin previously, (2) those who have other allergies in themselves or in the family, and (3) those who have had some manifestation of penicillin allergy previously. Where any doubt exists skin tests should be done before administration of the drug. Treatment must be prompt and should include epinephrine and antihistamines, intramuscularly or intravenously, application of a tourniquet proximal to the site of penicillin injection, aminophylline intravenously and occasionally oxygen. Corticosteroids, ACTH and penicillinase cannot be expected to take effect rapidly enough to be useful in such catastrophic situations.

Streptomycin and dihydrostreptomycin



not infrequently produce reactions similar to penicillin. The broad spectrum antibiotics rarely produce allergic reactions with the exception of chloramphenicol which has been blamed for the development of anemia. The sulfonamides may produce all types of reactions, but fortunately the newer sulfonamides are less likely to be responsible for allergic reactions than the older ones. Para-aminosalicylic acid used in treating tuberculosis may produce rash and fever in about 3 per cent of patients.

As with penicillin, both delayed and immediate reactions may occur following the injection of animal sera (tetanus antitoxin, diphtheria antitoxin, etc.). Certainly scratch tests, followed by intradermal tests, are important in detecting many of these sensitive individuals. Prophylaxis by routine administration of tetanus toxoid is recommended. Treatment and prevention of immediate reactions is similar to that employed with such reactions due to penicillin.

In addition to reactions from incompatible blood, other allergic reactions may occur from transfusions. These apparently result from food or drug antigens in the donor's blood to which the recipient is sensitive, or to the reaction of sensitizing antibodies in the donor's blood with substances to which the recipient is exposed. Various organ extracts including liver, heparin, insulin, posterior pituitary extract and ACTH may produce allergic reactions, and in all of these allergies the diagnosis can be confirmed by skin tests. Vitamins, toxoids, enzymes and vaccines may also be responsible for allergic manifestations. Urticaria is not uncommon following the injection of iodized preparations used in urography, and occasionally shock and death may occur. Skin tests are of dubious worth in preventing the anaphylactic type of response.

Acetylsalicylic acid, because it is so widely used, is one of the most common allergy producing drugs. Although the most frequent type of allergic response is urticaria and angioedema, the most serious is asthma which may rapidly progress to cyanosis and death. Skin tests are of no value in detecting the sensitive individuals. Aminopyrine can produce urticaria and asthma but it is best known for its ability

to produce granulocytopenia. An antileucocyte agglutinating factor is present in the serum of patients allergic to aminopyrine. Phenylbutazone used in the treatment of arthritis also has allergic effects which are dermatologic and hematologic. Antileucocytic agglutinins have been shown in the blood of patients with granulocytopenia following use of this drug.

About 3 to 5 per cent of those who use barbiturates may develop skin eruptions and fever. Occasionally thrombocytopenia may develop. Drugs used in the treatment of petit mal and grand mal may produce rashes or blood changes due to allergic reactions.

Numerous other drugs are capable of producing allergic reactions. These include the thioureas, quinine and quinidine, gold compounds, hydralazine, phenolphthalein and sulfobromophthalein. Contact dermatitis from local anaesthetics, epinephrine, antihistamines and formaldehyde is not uncommon.

Prompt recognition and treatment of allergic reactions due to a drug are most important. However, even more important is the realization of the possible danger which may result from the administration of almost any drug and the conviction on the part of the physician that treatment of the particular disease justifies the use of a potentially dangerous therapeutic agent.

A. B. S., Jr.

#### References

1. Feinberg, S. M.: Allergy from Therapeutic Products, J.A.M.A. 178:815, 1961.
2. Feinberg, A. M. and Feinberg, A. R.: Allergy to Penicillin, editorial, J.A.M.A. 160:778, 1956.



#### AMPAC

Many physicians face the "facts of life" implied in the organization of the American Medical Political Action Committee with mixed emotions. The motivation which drove them as young men into the medical profession was far removed from taking an active part in politics. In fact, until very recent years, as a group doctors were the poorest lot of citizens in our Nation, when measured in terms of the percentage who voted. Basically, it is still probable that doctors would rather deliver a baby, operate

upon or examine a sick person than to stand in line at the polls.

However, doctors have been rudely awakened and shaken out of their Victorian attitude toward politics. It was only when politicians began to play around with what the medical profession knows best—medical care—that the awakening came. It is the mixed feelings about medicine in politics which accounts still for the many heads which remain in the sand.

Many of the same public, and especially news media, and some physicians, who are criticizing and will continue to be critical of the American Medical Political Action Committee, condone or approve the Committee on Political Education of the AFL-CIO. They are the ones who will probably applaud Ex-Congressman Aime Forand's *National Council of Senior Citizens for Health Care Through Social Security*, whose objectives are spelled out in a paragraph from Forand's letter of November 13, 1961.

"The primary purpose of our new Council, as the full name indicates, is to weld senior citizens' organizations and millions of interested individuals from all over the country into one strong and effective voice in Washington. . . . Our immediate goal is to secure legislation providing health care for the aged through Social Security. . . ."

In the brochure accompanying the letter appears the following:

"There are 17 million of us over 65. Separately our voices or the voices of one small group are lost against the tidal wave of money and words which the hierarchy of A.M.A. is using in an all-out war against health care through social security. Only by uniting the many independent groups and individuals can we speak with a powerful enough voice to be heard."

The Washington office of the A.M.A., registered as a lobby, has the function of fact-finding and fact-supplying. The latter is called upon by Congressional committees and their personnel, and others in government, because of the special and accurate information available. Its facts are supplied to friend and foe alike. By contrast the new organization AMPAC, though it has the frank endorsement of the A.M.A., legally cannot be part of it. Its functions may be described in the following:

"Effective political action must be carried on at the local level and effective implementation must be done by local groups of physicians. The formation of AMPAC recognizes the need for a na-

tional medical political action committee to co-ordinate the political activities of physician groups at all levels throughout the country.

"The purposes of AMPAC . . . are: (1) to promote and strive for the improvement of government by encouraging and stimulating physicians and others to take a more active and effective part in governmental affairs; (2) to encourage physicians and others to understand the nature and actions of their government as to important political issues and as to the records and positions of political parties, officeholders and candidates for elective office; (3) to assist physicians and others in organizing themselves for more effective political action and for carrying out their civic responsibilities, and (4) to do any and all things necessary or desirable for the attainment of the purposes stated above."

There will be much criticism of AMPAC both by lay and professional persons. By liberal-minded doctors of the younger generation the A.M.A. is considered to be moss-backed, ultra-conservative and "agin everything," and its slow acceptance of tax-supported public health efforts, and health insurance are cited as evidence. I have heard this recently, and would only comment on the pitiful lack of historical perspective which is all too common among our profession. If one is to go back decades for criticism, one should also go back to look at the other side of the coin. Here one sees Dr. George Simmons, editor of the J.A.M.A. and General Manager of the Association, and the seeds he and the A.M.A. Council on Medical Education planted which led to Flexner's investigations with funds from the Carnegie Foundation. One sees the subsequent changes in medical schools possible only with the backing of the A.M.A.,—the Association of American Medical Colleges at that time being impotent. One sees the wide-spread effects on medical care of actions taken by the A.M.A. Council on Medical Education and Hospitals, in undergraduate, graduate and postgraduate areas of education, to redound only to the health of the Nation. One sees the establishment of specialty journals, even a half century ago, in some areas the first recognition of specialism; some of these journals have been published at a loss over the years. One sees the investment and contribution in the *Quarterly Cumulative Index Medicus* when the Association assumed the sole responsibility for the index-



ing of medical literature. There is neither time nor space to consider the contributions of such Councils as, on Drugs, and on Foods and Nutrition, and on Medical Physics, which, over the years, have done more to discourage quacks, nostrums and patent medicines than governmental and other agencies.

It is well to remember there are some bright spots in the life of this "most powerful," "richest" malevolent "union" to which we pay "financial tribute." Such knowledge may bring peace of mind to some members; to others it may bring answers to "What has the A.M.A. ever done of a positive nature?" To all it should mean that the American Medical Association acts for what it considers to be best, in a medical sense, for our Nation. If it does not know, who or what can know!

R. H. K.

## DEATHS

**Dr. Hugh Jackson Morgan**, 68, Nashville, died December 24th in Vanderbilt Hospital. Dr. Morgan was a member of the Vanderbilt Board of Trust and formerly head of the Department of Medicine of the Vanderbilt University School of Medicine.

**Dr. William Moore Hardy**, 78, Nashville, died December 11th in Baptist Hospital. He had served as associate secretary of the Tennessee State Medical Association and as editor of the Journal of the Tennessee State Medical Association.

**Dr. Guy Whitney Musgrave**, 77, Memphis, died November 18 at his home.

**Dr. Francis F. Painter**, 84, Morristown, died December 13th in the Morristown-Hamblen Hospital.

**Dr. Hiller Pascal Larimore**, 83, Chattanooga, died November 2nd following a lengthy illness.

**Dr. J. Horace Farrar**, 78, Manchester, died December 12th at Coffee County Hospital. He was a former Mayor of Manchester.

**Dr. Roger Bosswell Burrus**, 60, Nashville, died November 4th in New York City.

**Dr. J. D. Brewer**, 83, Dyersburg, died November 27 in a Memphis hospital.

**Dr. Joseph Gill Bridges**, 93, Chattanooga, died November 19th in a local hospital.

## PROGRAMS AND NEWS OF MEDICAL SOCIETIES

### Greene County Medical Society

The regular monthly meeting of the Society was held at the Elks Club, December 5. The meeting was preceded by a dinner. The Society elected as its officers, Dr. Ben J. Keebler, president; Dr. Dale Brown, vice president; and Dr. Kenneth Susong, secretary-treasurer. Delegate to the TSMA Annual Meeting is Dr. C. D. Huffman, the alternate delegate being Dr. Ben Keebler.

Dr. Huffman urged members of the Society to report reportable diseases to the health department. He also discussed the problem of infectious hepatitis in Greeneville and Greene County.

### Chattanooga-Hamilton County Medical Society

The Society's December meeting was conducted in the Interstate Building on December 5th. The principal business was the election of officers. Dr. Edward G. Johnson, president-elect, will assume office in 1962 succeeding Dr. Augustus McCravey; Dr. M. F. Langston was named president-elect to succeed to the presidency in 1963. Dr. Charles W. Hawkins was re-elected for a third consecutive term as secretary-treasurer. Others elected to office were: Dr. David P. McCallie, Board of Censors; Dr. George M. Shelton, Board of Governors; Dr. Guy M. Francis, Dr. Stewart Auerbach, Dr. J. Hicks Corey, Jr. and Dr. Cooper H. McCall, as members of the House of Delegates of TSMA.

Society met on November 28th to hear a panel discussion entitled, "Nuclear Radiation and Its Implications in Civil Defense." Dr. Moore J. Smith, Jr. served as moderator of the panel. The meeting was held in the Interstate Building.

### Bradley County Medical Society

At the December meeting, the election was held for the new hospital staff for 1962. Dr. John A. Rogness was chosen as president, Dr. Jack Free, vice president, and Dr. Ivan Humphries, secretary. The new staff assumed its duties January 1, 1962.



The Society launched an all-out drive to help meet the 290 pint Bloodmobile quota for December. Physicians worked with industrial plants, Red Cross and other organizations in an effort to reach the quota.

### Knoxville Academy of Medicine

The Society held its regular monthly meeting on December 12th in the Academy of Medicine Building. Those attending heard a message from the president-elect, Dr. H. Dewey Peters. In addition, Mr. Robert Fraim discussed electronic data processing and means for its use in medicine.

### Roane County Medical Society

The monthly meeting of the Roane County Medical Society was held on November 28th in the Oak Ridge Hospital, preceded by a dinner. The scientific program consisted of a presentation entitled, "Management of Common Dermatologic Diseases," by Dr. Richter Wiggall, Knoxville.

### Consolidated Medical Assembly of West Tennessee

The monthly meeting of the Assembly was held on November 7th in the New Southern Hotel at Jackson. Dr. Alvin J. Ingram, Memphis, was the guest speaker,—his subject "Thoughts and After Thoughts of an Orthopedist."

At the annual Christmas Banquet of the Society held on December 6th at the Jackson Country Club, officers were elected for 1962.

They are: Dr. David Earl Stewart, Brownsville, president; Dr. Charles Stauffer, Jackson, first vice president; Dr. Lee Rush, Somerville, second vice president; Dr. Elbert E. Edwards, McKenzie, third vice president; Dr. George B. Wyatt, Jackson, secretary-treasurer; Dr. Roy Douglas, Jr., Jackson, assistant secretary-treasurer; and Dr. James Langdon, Jackson, projectionist.

### Robertson County Medical Society

The Society conducted its regular monthly meeting on November 20th in the Jesse Jones Hospital at Springfield; the meeting was preceded by a dinner. The scientific program consisted of a medical movie on problems in heart disease.

Officers were elected for 1962. Dr. John S. Freeman, Springfield, assumed the office of president. Dr. John S. Hawkins was elected vice-president and Dr. W. P. Stone was re-elected secretary-treasurer.

### Memphis-Shelby County Medical Society

The monthly meeting of the Society was conducted on October 3rd in the Institute of Pathology. The scientific program was entitled, "The Day Dr. Mayo Hopkins Was Sued," or "The Anatomy of Medical Litigation." The program was presented by the Medical Legal Committee and proved to be extremely informative.

Dr. Alvin Ingram made an announcement relative to the Society's part in the S.U.N. campaign.

## NATIONAL NEWS

### The Month in Washington

(From the Washington Office, AMA)

The Kennedy Administration and other main supporters of medical care of the aged under social security are preparing to make an all-out effort to push the legislation through Congress in the 1962 session.

Their campaign poses a serious challenge to the medical profession and its allies in the fight against such compulsory government health schemes.

It is too early to evaluate the effect on the legislation of changes in House Democratic leadership and House Ways and Means Committee membership. The White House has been exerting pressure in an effort to have a congressman supporting its views named as a replacement for Rep. Frank Ikard (D., Tex.), who resigned. Ikard opposed proposals to put health care under social security.

Administration officials from President Kennedy down publicly gave the Administration medical care legislation, the King-Anderson bill, top priority for the 1962 session. During the interim after the adjournment of the 1961 session, the Administration held a political roadshow in key cities in an effort to build up public support for the King-Anderson bill and other Administration proposals that did not fare so

well in Congress. At a number of the so-called White House Regional Conferences, physicians forcefully expressed the medical profession's opposition to putting health care under social security.

The AFL-CIO geared for a renewed fight for the Administration legislation. A new national organization of the elderly has been formed with the main purpose of lobbying for the King-Anderson bill. It is the National Council of Senior Citizens for Health Care Through Social Security. Former Rep. Aime J. Forand (D., R.I.), who sponsored such legislation when he was in Congress, was the leading figure in organizing the group and is national chairman.

On the other side of the fight, there also is a new organization—The American Medical Political Action Committee. It is a non-profit, voluntary, non-partisan, unincorporated committee set up last May with the approval of the A.M.A. Board of Trustees. AMPAC—with functions independently of medical organizations and societies whether at the national, state or local level—was organized to meet “an unmet need—the need of providing the medical profession with an opportunity to assume a more active and effective role in public affairs.” The A.M.A. Board of Trustees House of Delegates at Denver, in November urged that all physicians, their wives and interested friends join AMPAC and similar political action committees in their states and communities.

Dr. Leonard W. Larson, A.M.A. president, warned the House of Delegates that physicians “are engaged in a historic struggle to preserve our country's unique system of medical care and our stature as a profession.” He said both are “seriously threatened” by such legislative proposals as the King-Anderson bill.

Dr. Larson said that the A.M.A. could expect “even more bitter attacks” than those so far from Administration and AFL-CIO spokesmen. He appealed to physicians to support medicine's friends in Congress with money and personal campaign assistance. He noted that AMPAC provides “a national mechanism through which physicians and their families can channel funds for stra-

tegic placement where the money will do the most good.”

A leading congressional opponent of health care under social security also warned of the seriousness of the fight ahead. Sen. Wallace F. Bennett (R., Utah), a member of the Senate Finance Committee which handles such legislation, told students at Harvard University Medical School that there undoubtedly would be “a determined drive to rush H. R. 4222 (the King Anderson bill) through the Congress” in 1962.

“The propagandists who are behind the determined drive for a system of socialized medicine have latched on to an emotional appeal in trying to push this legislation through the Congress,” Bennett said. “They have tried to create a public image that the A.M.A. and any individual who opposes this plan is motivated by selfish interests.

“As one who is vigorously opposed to compulsory Federal medical care, I resent the tactics used by those who advocate this system of socialized medicine. There is an answer to this problem of meeting the medical needs of our aged, and I frankly believe that it is being honestly met by our present voluntary health insurance programs and by the cooperative federal-state aid to our needy aged who are incapable of paying their own medical expenses.

“I am opposed to H.R. 4222 or other bills which would open the flood gates to a system of compulsory medical care, directed first to our aged, but which, once instituted, would surely by political pressure be expanded to all of our population. The battle over this legislation in this next Congress is bound to be hectic and monumental. It is a battle we can't afford to lose.”

## MEDICAL NEWS IN TENNESSEE

### Tennessee Hospital Beds

At the close of the year, there were 212 hospitals with 29,333 beds in operation in Tennessee. Of the total number of beds, 4,801 have been provided since the beginning of the Hill-Burton Act in 1947. The new construction has increased the State's total number of general beds in the past 14 years by 3,294; beds for tuberculosis by 526;



beds for mental patients by 799, and those for chronic disease by 182.

This large number of beds is responsible for making Tennessee one of the leading states in the Southeast in number of hospital beds per population. In a special report released by Parke, Davis and Company, Tennessee was found to have 8.1 hospital beds per 1,000 population. Tennessee's bed-to-population ratio exceeds that of the national average, which is reported as 7.5 per 1,000 population.

### **Your Journal Rated Among Best**

The Journal of the Tennessee State Medical Association was judged among the nation's finest state medical publications at the 1961 state medical journal conference, held in October in Chicago.

At the meeting sponsored by the State Medical Journal Advertising Bureau, Tennessee's Journal was judged in the class of publications that placed a rating above 80.

The conference program featured educational presentations on the function, editorials, medical writing and business management of medical journals.

### **Cardiac Day**

Six distinguished medical scientists, including the immediate past president of the American Heart Association, served as guest speakers for Cardiac Day, the symposium on heart disease presented in Nashville by the Middle Tennessee Heart Association.

The Tennessee Department of Public Health and Vanderbilt University School of Medicine cooperated in presenting the medical symposium at Vanderbilt University on November 16th and 17th.

The six guest speakers were: Dr. Alexander S. Nadas of Boston; Dr. Oglesby Paul, Chicago; Dr. Stanley Crawford, Houston; Dr. Aldo A. Luisada, Chicago; Dr. Grace M. Roth, Albuquerque; and Dr. John H. Moyer, III, Philadelphia.

### **Park Vista Hospital Opens in Nashville**

The new \$1,000,000 Park Vista Convalescent Hospital and Nursing Home was officially opened on December 17th. The new facility has 152 beds and is designed to serve convalescent patients still in need of

hospitalization but past the critical stage of illness. Costs will range from \$9 a day upward, considerably below the cost of care in a general hospital. The hospital will also provide extensive nursing care for elderly patients. The hospital is owned by 21 Nashville physicians and four businessmen.

### **Tennessee Chapter American College of Surgeons**

The Tennessee Chapter of the American College of Surgeons held a two-day meeting in Knoxville at the Andrew-Johnson Hotel on November 10-11.

Five prominent speakers in various fields of medicine gave lectures during the meeting. Speakers and their topics were: Dr. William J. Peete, associate professor of surgery, Duke University, who discussed "Surgery of Ulcerative Colitis"; Dr. J. D. Martin, Jr., professor of surgery, Emory University, discussed "Hernia Operation"; Dr. Stanfield Rogers, research director of the University Hospital and Research Center, Knoxville, spoke on "Selection of a Chemotherapeutic Agent in the Treatment of Individual Tumors"; Dr. E. Converse Pierce, Knoxville heart surgeon, presented a case on "Deep Hypothermia with Cardiac Arrest for Intracardiac Surgery"; and Dr. McChesney Goodall, medical director of the University Hospital and Research Center, Knoxville, spoke on "Adrenal Gland in Surgery."

Some 200 surgeons and physicians from over the state attended the meeting.

### **Nashville Chosen for Health Survey**

Nashville was one of 42 cities selected to have a public health survey designed to fill the country's "health gap." A team of experienced physicians, interviewers, medical historians and nurses brought a mobile clinic to Nashville on November 21st where approximately 150 residents of the city were examined.

Information collected from the national health survey will arm the U. S. Public Health Service with an inside look into the various segments of the American population as related to health.

### **Southern Thoracic Surgical Association**

The 8th annual meeting of the Southern



Thoracic Surgical Association was held in Memphis at the Peabody Hotel, November 16-18. Eminent specialists presented 26 scientific papers on surgical management of diseases of the chest, lung and heart.

Approximately 125 members from 16 southern states attended the sessions.

### **Memphis Pediatric Society**

At the meeting of the Society on December 12th, Dr. Fontaine S. Hill was elected President. The meeting was held at the Memphis Country Club. Dr. Harry J. Jacobson was elected vice president and Dr. Emmett D. Bell, Jr. was elected secretary-treasurer.

### **Andrew Jackson Chapter, TAGP**

Officers of the Andrew Jackson Chapter, Tennessee Academy of General Practice, were recently elected at a banquet held at Hillwood Country Club in Nashville. New officers are: Dr. Price H. Duff, president; Dr. James M. Hudgins, vice president; Dr. Wendell H. Wilson, secretary-treasurer.

### **Vanderbilt University School of Medicine**

Dr. Hugh J. Morgan, Emeritus Professor of Medicine, died on December 24. A native of Nashville, born in 1893, he attended Vanderbilt University, where he played varsity football. He received his M.D. degree from Johns Hopkins in 1918. After service in World War I, he returned to Johns Hopkins Hospital for graduate work which he subsequently continued at the Rockefeller Institute for Medical Research in New York. From 1924 to 1935 Dr. Morgan was associate professor of medicine; in 1935 he became professor of medicine and chairman of the department, a post held until his retirement in 1958.

During World War II, from 1942 until 1946, Dr. Morgan served as Chief Medical Consultant on the Surgeon-General's staff, in the rank of brigadier-general. Professional honors included the presidencies of, —The Association of American Physicians, the American College of Physicians, the American Clinical and Climatological Association, and the Johns Hopkins Medical and Surgical Association. He served on the

American Board of Internal Medicine for a number of years.

Dr. Morgan was a member of the Vanderbilt Board of Trust and had been president of the Vanderbilt Alumni Association.



Dr. George R. Meneely, associate professor of medicine, for 18 years a member of the faculty, and the director of radioisotope center of Vanderbilt University Hospital, has resigned to become director of the Department of Scientific Assembly of the American Medical Association. He will serve as secretary to the Council on Scientific Assembly planning and organizing the scientific program for meetings of the A.M.A. Since 1954 he has been chairman of the Special Exhibit Committee on Pulmonary Function at the A.M.A.'s Scientific Exhibit. This has attracted much attention and attendance year after year.



The A. B. Learned Graduate Science Hall at Vanderbilt University, a pioneering basic research center, was recently dedicated. Dr. Luther L. Terry, surgeon general of the U. S., in dedicating the nine-story \$2 million building, said a scientific pattern has been woven at Vanderbilt representing research in the life science "as it has been imagined and worked for over a long period of time."

The structure, begun in 1952 and completed in 1961, contains 40 laboratories encompassing 10 medical and scientific fields. It was designed specifically for collaborative research between medical scientists and those in basic science in the Vanderbilt Graduate School.



Memorial gifts totaling \$2,557 has been allocated for cardiovascular research by the Middle Tennessee Heart Association. The grant will support a research project to be conducted by Dr. Virgil S. LeQuire, associate professor of anatomy.

### **University of Tennessee College of Medicine**

The Board of Trustees of the University of Tennessee has changed the name of the School of Biological Sciences to the School of Basic Medical Sciences. This followed

the recommendation of Dr. Homer Marsh, vice president of the Medical Units at Memphis.

★

Dr. Phil C. Schreier, professor and chief of the Division of Obstetrics and Gynecology, presented a closed-circuit television station to his division on November 18th. The station will be used to improve training of students, interns and residents, and will enable the groups to watch operative procedures from classrooms as they are performed in the delivery suite of the maternity hospital.

★

The medical units recently sponsored a symposium on, "Scientists, Librarians and the Information Crisis." The symposium explored ways of coping with the "crisis of information." Some 1,000 scientists and librarians of local colleges and industries were invited to the symposium.

★

\$21,080 has been granted to Dr. Andrew Lasslo, head of the department of pharmaceutical and medicinal chemistry, the funds to be used in pharmacologic tests. A \$30,417 grant has been made by the Department of Health, Education and Welfare, the funds to be used for further research on blood disorders being conducted at the University Hospital by Dr. Amoz I. Chernoff.

The National Institutes of Health of the U. S. Public Health Service has made a \$100,000 grant to support a four-year, three-part study of the role of the kidney as it is related to the general circulatory system in man.

★

Funds made available for research to members of the staff of the School of Biological Sciences and the College of Medicine are increasing at the rate of \$500,000 a year, according to Dr. M. K. Callison, Dean of the College of Medicine. For the fiscal year July 1, 1960 to June 30, 1961, a total of \$971,504 was used for research by members of the staff in the Colleges of Medicine.

### University Research Center and Hospital

A special \$200,000 research grant has been awarded to Dr. McChesney Goodall, medi-

cal director of the University Research Center and Hospital at Knoxville. (This is in addition to a recent \$480,714 federal grant toward the construction of an additional five-story laboratory building at the Center.) The special grant by the National Institutes of Health is for research on epinephrine and norepinephrine, and will start in April for a period of five years.

### Meharry Medical College

The National Institutes of Health has awarded Meharry Medical College a grant of \$764,808 to establish a cardiovascular disease clinical center. The grant will provide for patient hospitalization, equipment, and modern laboratory facilities necessary to carry out the research.

★

A symposium on rheumatoid arthritis was held November 29th in the Public Health Lecture Hall. Dr. Philip S. Hench, professor of medicine at the University of Minnesota was the principal speaker. Others on the program included: Dr. Leon Sokoloff, chief of the section on rheumatic diseases, laboratory of experimental pathology, National Institute of Arthritis and Metabolic Diseases; Dr. O. Currier McEwen, New York University, professor of medicine; Dr. Vincent C. Kelley, University of Washington, professor of pediatrics; and Dr. Carroll B. Lawson, State University of Iowa, professor and head of the department of orthopedic surgery.

## PERSONAL NEWS

**Dr. E. Converse Peirce, II**, Knoxville, announces the opening of his office for the practice of Thoracic and Cardiovascular Surgery.

**Doctors J. E. Acker, Jr., Frank London**, and **Freeman L. Rawson**, Knoxville, announce the formation of the Knoxville Cardio-vascular Group.

**Dr. Robert Brashear**, Knoxville, has been elected chief of staff of St. Mary's Memorial Hospital for 1962. Others elected were **Dr. Joseph Acker**, chief elect, and **Dr. Robert Gilbertson**, secretary.

**Dr. Alex Shipley**, Knoxville, is the new president of the Tennessee Public Health Association.

**Dr. Frank C. Womack**, Nashville, has been named president-elect of the Baptist Hospital Medical Staff for 1963. **Dr. James N. Thomasson**,



Nashville, has been installed as the 1962 president. **Dr. John Farringer** will serve as secretary-treasurer.

**Dr. Robert B. Clark, III**, Chattanooga, recently addressed the Greater Chattanooga Cystic Fibrosis Chapter.

**Dr. Walter C. Shea, Jr.**, Lenoir City, has been elected District Sixteen Board Member of the American Cancer Society, Tennessee Division.

**Dr. A. Julian Ahler**, Harriman, has been elected a board member of the American Cancer Society, Tennessee Division.

**Dr. William R. Fowler**, Chattanooga, has been recently certified as a Diplomate of the American Board of Surgery.

**Dr. David H. James, Jr.**, Memphis, is leaving private practice to join the St. Jude Foundation Hospital to do research in leukemia and allied blood diseases.

**Dr. Swann Burrus, Jr.**, Jackson, has been elected a board member of the American Cancer Society, Tennessee Division.

Officers recently elected for the Nashville Academy of Medicine to serve in 1962 include **Dr. Joseph M. Ivie**, president; **Dr. Walter L. Diveley**, president-elect. **Dr. Tom E. Nesbitt** was re-elected secretary-treasurer. **Dr. James Callaway** and **Dr. Douglas Riddell** were named members of the Board of Directors for three year terms.

**Dr. John E. Neumann**, Paris, has been named medical examiner for Henry County.

**Dr. George R. Meneely**, Nashville, former director of nuclear medicine and biophysics at the Vanderbilt University School of Medicine, has resigned to become director of a division of the American Medical Association. He will head the AMA Scientific Assembly Department.

**Dr. Robert T. Tucker, Jr.** has moved to Bemis where he will be associated with **Dr. Allen Williams** in the practice of medicine.

**Dr. Herschel A. Graves, Jr.**, Nashville, has been elected president of the medical staff of Nashville General Hospital. **Dr. Thomas G. Pennington** was named vice president and **Dr. William F. Sheridan, Jr.** was named secretary and treasurer.

**Dr. F. Harlan Booher**, Lynchburg, has been elected president of Lincoln County Medical Society.

**Dr. O. L. Von Canon**, Chattanooga, was a recent speaker at the Greater Chattanooga Cystic Fibrosis Association.

**Dr. Harrison O. Bourkard, Jr.**, Knoxville, has been elected chief of staff of University Hospital. **Dr. Felix G. Line** was selected as secretary.

**Dr. McChesney Goodall**, Knoxville, recently addressed the Knoxville Area Dietetic Association.

**Dr. Alvin J. Ingram**, Memphis, recently addressed the Rotary Club and his subject was "A Humane Society and Its Aged."

**Dr. R. C. Kash**, Lebanon, is the president of the Middle Tennessee Medical Association. He will be succeeded by **Dr. Richard E. Green** of Murfreesboro.

**Dr. B. G. Mitchell**, Memphis, has been elected

chairman of the department of surgery at St. Joseph Hospital. **Dr. Jerome N. Barrasso** was named secretary of the department.

Officers of the Memphis-Shelby County Medical Society recently elected were: **Dr. Gilbert J. Levy**, president-elect succeeding **Dr. Alvin J. Ingram**, president, in January 1963; **Dr. A. Roy Tyrer**, vice president; **Dr. Robert McBurney**, secretary; and **Dr. H. K. Turley**, treasurer.

**Dr. Bryant S. Swindoll**, Tullahoma, director of the Coffee County and Franklin County Health Department, is leaving to take a similar position in Arkansas.

**Dr. Daniel H. Framm**, Chattanooga, has recently been certified by the American Board of Pediatrics.

**Dr. C. B. Harvey**, Tullahoma, has been appointed director of the health services for the Tullahoma Civil Defense Organization.

**Dr. Albert J. Mitchum** has joined **Dr. O. S. Luton** in the practice of medicine at Erin.

**Dr. Warren H. Kimsey**, Chattanooga, recently addressed the American Society of Safety Engineers in Chattanooga.

**Dr. W. J. Core**, Nashville, has been named city physician by the Mayor of Nashville.

**Dr. James N. Etteldorf**, Memphis, has been re-elected president and chief of the medical staff of Le Bonheur Children's Hospital. **Dr. W. P. Stepp** was named vice president; **Dr. Joe Rothschild**, secretary; **Dr. R. Calandrucchio**, chief of surgery; and **Dr. R. B. Miller**, chief of medicine.

**Dr. E. Perry Crump**, Nashville, has been appointed to the medical advisory committee of the social security administration.

**Dr. Earl E. Roles, Jr.**, Beckley, West Virginia, has joined the staff of the Queen City Infirmary in Tullahoma.

**Dr. S. C. Fain**, Jefferson City, has been elected chief of staff of Jefferson Memorial Hospital. **Dr. Frank Milligan** was elected chief of the surgical staff and **Dr. John Ellis** was re-elected chief of the medical staff.

**Dr. Joseph C. Orman**, Memphis, has been elected president of the medical staff of St. Joseph Hospital, succeeding **Dr. L. C. Lewis**. Named president-elect was **Dr. Frank S. Allen** and **Dr. William L. Moffett** was chosen secretary.

**Dr. O. W. Ramsey**, Cross Plains, is the new president of the medical staff at Jesse Holman Jones Hospital in Springfield. He succeeds **Dr. John Turner**. Other officers elected were: **Dr. John S. Freeman**, vice president and **Dr. Warren Hayes**, secretary.

**Dr. John P. Platt**, Johnson City, has been elected to the district board of the American Cancer Society, Tennessee Division.

**Dr. Fred M. Valentine, Jr.**, Newport, was a recent speaker before the Lions Club.

**Dr. W. L. Taylor**, Lewisburg, has been named to the Board of Directors of the American Cancer Society, Tennessee Division.

**Dr. Harold Schwartz**, Chattanooga, has recently completed a course in cancer chemotherapy at



the Sloan-Kettering Institute at the New York Memorial Hospital.

**Dr. Harry A. Stone**, Chattanooga, was a recent speaker on a local TV program.

**Dr. J. Paul Baird**, Dyersburg, was the program speaker at a recent meeting of the Rotary Club.

**Dr. Estle P. Muncy**, Jefferson City, has been elected president of the Hamblen County Medical Society. **Dr. T. J. Hill**, Rutledge, was named vice president and **Dr. LeRoy Barclay**, Morristown, was re-elected secretary-treasurer.

**Dr. Louis Rosenfeld**, Nashville, has been elected president of the Nashville Surgical Society. Others named included **Dr. Horace Lavelly**, vice president; **Dr. B. F. Byrd, Jr.**, president-elect; and **Dr. Cloyce F. Bradley**, secretary.

**Dr. Richard O. Cannon**, Nashville, has been elected president of the Medical School-Teaching Hospital Section of the Association of American Medical Colleges.

**Dr. J. B. Sams**, Erwin, has begun medical practice in Jefferson City where he is associated with **Dr. J. W. Ellis**.

**Dr. John A. Shields**, Manchester, has joined the Young-Gardner Clinic staff where he will engage in the general practice of medicine.

**Dr. Robert G. Jordan**, Memphis, has been appointed to the committee on the handicapped child of the American Academy of Pediatrics.

**Dr. Turley Farrar**, Memphis, has been elected to membership in the Western Surgical Association.

**Dr. William F. Mackey**, Memphis, has been elected chief of the St. Joseph Hospital department of obstetrics and gynecology.

**Dr. Cyrus C. Farrow, Jr.** and **Dr. Charles M. Wascom, Jr.**, both of Memphis, have been named Diplomates of the American Board of Pathology.

**Dr. G. W. Patterson** has opened his office for the practice of medicine in Roane Mountain.

**Dr. Huey Holt**, Dyersburg, has entered the U.S. Army for a two year tour of duty.

**Dr. William P. Maury, Jr.**, Memphis, has been named president elect of the medical staff of Baptist Hospital.

## HISTORICAL NOTES

### GOITER AND MAN\*

Charles E. Rea, M.D., St. Paul, Minn.

First, I want to tell you how honored I am to have been chosen to give the first Dwight E. Clark lecture and to thank the committee for asking me to come. I knew Dwight for many years. I had met him when he was at the University of Chicago, before World War II, but I knew him best when he was in the Army with us at Oak Ridge. I remember my meeting with him

when I went to Carlyle Barracks with Major Joseph Ryan to procure some more medical officers for the hospital at Oak Ridge. When we arrived there, Colonel White gave us a list of names of medical officers who would be eligible for transfer. One of the names was that of Dwight Clark which pleased us immensely. Dwight had been on a ten mile hike or over-night bivouac, and I believe if we had told him at that time that he was going to Siberia to dig trenches he would have been happy to come. When he was transferred about two weeks later I thought he acted rather quiet and reserved which was unlike him. One day I called him in and asked him what the trouble was. Evidently, before he came to us, he had been told we were experimenting on human beings and that he might be a subject. When I assured him that there would be no human vivisection he appeared a little relieved. After the War we saw each other at meetings and one of the last times I saw him was when he came to St. Paul to give a talk at the St. Paul Surgical Society. His wife, Eleanor, was with him and we had a get-together of the old Oak Ridge crowd. He is one person of whom we have nothing but happy memories; he was not only a superb surgeon, an excellent teacher but a good friend. Because he had such an interest in the goiter problem I have selected this subject "Goiter and Man" for the lay lecture tonight.

We can treat many diseases without knowing the exact cause. For instance, in cancer, we have various treatments but know little of its cause. On the other hand, knowing the cause of the disease does not necessarily mean that we have a specific treatment. For goiter we have had treatments for many years and through the evaluation of the various forms of treatments our ideas of the function of the thyroid gland have evolved. This is the phase of the goiter problem I wish to present to you tonight.

The word goiter comes from the Latin "gutter" meaning throat. The ancient physicians knew very little about the thyroid and its functions, but they were well acquainted with disease of the thyroid gland, its symptoms and its function. The historians Juvenal and Pliny remarked about the

\*The first Dwight Clark Lay Lecture given at Oak Ridge, Tenn., September 28, 1960.

prevalence of goiter in the Alpine Region, notably among the Helvetii, the ancestors of the Swiss. As Pliny remarked, "only men and swine are subject to swellings in the throat, which are mostly caused by the noxious quality of the water they drink."

Galen vaguely described the thyroid and suggested that it secreted a fluid to lubricate and sweeten the voice. His observations went unchallenged until the Renaissance when Vesalius described the thyroid and noted that it had no duct to secrete any vocal lubricant.

Fabricius, about 1613, said that the thyroid was the origin of goiter. About 1656, Wharton gave the name *Throidea* to the thyroid gland from its shape like a shield, and was impressed by its enormous blood supply. He thought the function of the gland was to take up excess moisture from the recurrent nerve, "cherish" the cartilages, round out and beautify the neck, particularly in women, wherefore they possessed a larger gland.

The first to link endemic goiter with cretinism was Paracelsus, who studied the inhabitants of the Salsburg region and observed that "while goiter is not necessarily a characteristic of idiots, yet it is commonly found among them." During the 19th Century the relationship of thyroid disease and cretinism became so alarming that commissions were appointed in various regions of Europe to study the questions. In France, Baillarger showed that there existed a close relationship between endemic goiter and cretinism. In England, in 1874, Sir William Gull called attention to a peculiar condition resembling cretinism coming on in adult life, but it was Ord in 1878 who invented the word *myxedema* or *mucous edema*.

Because of its apparent vascular luxury, the gland had been looked upon as a mechanical regulator of the cerebral circulation. Ruysch, about 1700, had declared there was probably an internal secretion of the thyroid, but Schiff was the first one to prove this, in 1856. He showed that the thyroid was essential to life in dogs, that its removal meant death, and furthermore he prolonged life of the thyroidectomized animals by reimplantation of parts of the gland. Several years later G. R. Murray,

of London, found that injections of thyroid extract would prevent *myxedema* and became the first to make effective the use of *hormonotherapy*.

### Treatment

*A. Iodine.* The early Mediterranean peoples fed burnt sponge and seaweed to hypothyroactive patients, and the ancient Chinese are believed to have done the same. With the discovery of iodine by Courtois, Fife and Straub, the first scientific treatment of goiter came into practice. Coindet had announced a cure with his solution which consisted of potassium iodide .025, iodine 0.7 and water 40. Like most new treatments the therapy was accepted with more fervor than caution. Lugol published his formula (potassium iodide 10, iodine 5, water 100) and it was used at first for the treatment of tuberculosis. Prevost, about 1849, advanced the theory that a deficiency of iodine was the cause of goiter. He had support from the chemist Chatin who determined the iodine content of the air, water and soil of the goiter-free and infested areas. As a result of this work a law was passed for some of the mountainous departments of France providing for compulsory administrations of iodine to prevent goiter. The wholesale use of large amounts of iodine, however, was not an unmixed blessing and new symptoms from iodism came into the clinical picture. Rillier read an extensive report before the Academie Francaise, in 1860, relating the *pros* and *cons* of iodine administration, its use and abuse and to some regional idiosyncrasies. The whole problem, of course, was quite confusing, since up to this time terms such as *thyrotoxicosis*, *hyper* and *hypothyroidism* were not known. Then to add to this confusion, it was thought that certain nontoxic goiters were made toxic by the use of iodine (*jod-basedowism*). In 1896, Baumann discovered iodine in the thyroid gland. In 1900, Gley and Bourcet identified the presence of organic iodine in plasma in combination with serum proteins. Kendall, in 1915, crystallized tetraiodothyronine from alkaline hydrolystates of thyroid tissue. The chemical structure of thyroxine was elucidated by Harington and his co-workers in 1926 and 1927. All this seemed settled until 1954



when Gross and Pitt-Rivers found a compound with only three iodine atoms, triiodothyronine, in the gland and in the plasma. This substance proved to be physiologically more potent and more rapid in onset of action than thyroxine with four iodine atoms and was clinically effective in myxedema. It was speculated that thyroxine was a form in which the thyroid hormone is secreted while triiodothyronine is the form which is active in the tissues. Deiodination is thought to take place in the tissues or liver, although Roche, in 1952, thought deiodination takes place in the thyroid with release into the circulation of the triiodothyronine.

*B. Operation.* In the early days operative measures for the relief of goiter were undertaken only because life was threatened with suffocation. Without any preconceived *modus procedendi* of the operation, with inaccurate anatomic studies, about all that could be done was to shell out the circumscribed goitrous nodules and arrest the bleeding by ligating tissue. Cysts were incised, their contents evacuated and replaced with coagulating or caustic substances. The hot iron, followed by chemical escharotics were used in a general indiscriminate way. Goiters were also destroyed by suppurative processes induced by seton, wick, hair-seton, herb plasters, circumvection with a shoe-string, and infra- and supracutaneous ligatures followed by caustics. Toward the end of the 18th Century a few courageous souls with a more clarified anatomic concept and a carefully planned technic tried elective removal of goiters. Even in these primitive times, surgeons like Desault, and Hedenus successfully operated on these patients with a low mortality. Progress was slow, however, since pain, infection and hemorrhage continued to embitter surgical treatment. The danger of infection was one of the reasons thyroid surgery was almost given up by many of the better surgeons. Bruns, in 1864, reported 6 deaths from infection in 28 goiter operations. Billroth's mortality in Zurich was so discouraging that he almost abandoned goiter surgery while at Vienna until 1877. It is so easy to comment on the difference between surgery then and now, when we have aseptic technic, improved anesthesia, antibiotics, blood transfusions

and some idea of fluid and electrolytic balance, but remember that surgery has been a gradual evolution over the years to what we know now.

It does not seem possible that surgeons would attempt to operate on patients with enormous goiters without enough instruments. However, this was not unusual. Pean, in 1878, ennuclated a solid goiter in the right lobe, the size of a fetus' head. The vessels were clamped for division; 35 clamps were used, and 12 of these clamps were removed the day after operation. Unfortunately the patient died 2 weeks later with signs of a mediastinal abscess, pericardial and pleural effusion and shock. Halstead remarked that the number of clamps still remaining in the wound at the time of death were not mentioned.

As with most scientific discoveries, the way is paved by one genius who puts an operative procedure upon a scientific basis. Such a man was Kocher of Berne, Switzerland. After excellent surgical training he went abroad to visit Billroth, Langenbeck, Lister and Pasteur. He returned home, became an assistant to Luecke, the director of the Surgical Clinic of Berne in 1866. Kocher was one of the first to eliminate the unnecessary features of listerism,—that is, replacing antisepsis with asepsis. In 1872, when Luecke went to Strassburg, Kocher was chosen his successor in Berne. From that day on we see this man, almost single-handedly, start his way into the most unknown realm of thyroid disease. Kocher had an inquisitive mind, a moral sense of responsibility to his patients and to the medical profession, and was very critical of his own results.

The first thing that came under his critical eye was the treatment of goiter by the injection of iodine and caustic substance. It was well known that the injection of alcohol or boiling water into the thyroid had the same effect as the injection of iodine and caustic substances. All it did was to produce an aseptic inflammation of the connective tissues followed by scar and shrinking. Noting these results at numerous autopsies, Kocher protested vigorously and came to the conclusion that this was barbarous treatment and that operative surgery was



necessary. However, the big difficulty with surgery was uncontrollable hemorrhage and injury to the recurrent nerves which caused hoarseness. Therefore, he set out to systematically study the blood supply to the thyroid. After much anatomic dissection he devised a methodical ligation of the veins of the thyroid to follow cleavage in a bloodless field. (Woelfler, to be true, had suggested tying the arteries as a preliminary measure to induce atrophy of the goiter but not so much as a procedure for the surgical removal in a bloodless field.) Having set up an operative technic, he now went through a critical experience of evaluating how much thyroid to remove. Like most men who err as to cause and effect, Kocher was no different. If the patient had a large goiter, he believed some of the postoperative symptoms were due to an inadequate supply of oxygen to the brain which had been caused by compression of the trachea. We know now that these patients who had total thyroidectomies developed myxedema after operation. One of his patients, a Marie Birchsel, caused Kocher much food for thought. The patient, 11 years old, had a rapidly growing goiter. Medical treatment, including injections, had failed when she was operated upon, August 1, 1874. She recovered promptly from a total excision but the family physician reported that after a few weeks of good health the child had changed from a quick active child to a sullen, dull, lazy one. How much effect this had on his future operations is unknown, but between 1874 and 1877 Kocher only operated on 5 patients with goiter. In 1877, he operated on a boy named J. Kropf who was 17 years of age. He also had a total excision of the goiter and enjoyed good health until 1881 when he developed a recurrent struma, then progressive anemia and passed into a cretinoid state. Careful physical examination showed compression of the trachea and Kocher was more than ever convinced that the boy's condition was due to an inadequate supply of oxygen to the brain. He was disturbed, however, by reports received upon other of his total extirpations, and Reverdin, in 1882 told of similar experiences. To get the facts Kocher recalled all the patients who had been

operated upon for a careful examination. Of the patients who had had a total extirpation, he was able to examine 18 personally. Two had nodules left at the site of the thyroid and appeared to be in good health. Nothing of the gland could be found in the remaining 16, and all of them presented a more or less uniform syndrome of disturbance of their general health, and had progressed to degrees of severe "cretinism" with severe mental damage. All patients operated upon within their periods of growth were cretins. Those operated on later in life presented normal physical development but showed signs of myxedema. These patients reported that soon after being discharged from the hospital they had developed aching pains in their arms and legs followed by great weakness and fatigue. They were very sensitive to cold. It was noticed that formerly bright children became sluggish in mentality and were quite forgetful. Their skins changed, became scaly and their hair fell out. Kochner said there was a definite relationship between panthyroidectomy and these cretinoid changes. He called this condition cachexia strumipriva in contrast to the known cachexia iodica. He decided that total extirpation could not be justified and he never did a total thyroidectomy thereafter except for malignancy. This idea was received by the German medical world with indifference, and it was not until Reverdin published his works on postoperative myxedema, based more or less on Kocher's work, that Kocher's ideas became recognized.

Every summer, Kocher with his students, examined the people in the Canton Berne. Thousands of children were scrutinized, including cretins, deaf mutes, as well as normal children so the series was well controlled. The water supplies were investigated and the mineral content of the different areas charted. He published a map showing the goiter distribution in relation to the geographic formation and suggested that the government take steps to buy known health springs and furnish the people with safe drinking water. He believed that unboiled water, in the infected regions contained the unknown organism or the

toxic products which caused goiter and to prevent goiter he suggested boiling water and adding a little iodine. It was more than 30 years later that McGarrison in India eradicated goiter within 4 years from the military school at Sanawar in Punjab by means of a controlled water supply, and that regardless of the iodine content. Marine noting the prevalence of goiter in the Great Lakes region found that he could cure goitrous animals by feeding minute quantities of iodine. A decade after his laboratory experiments he demonstrated, in 1916, that traces of iodine administered daily made school children less prone to goiter than those who received none. Marine urged addition of iodides to drinking water or table salt in regions of endemic goiter. This proposal at first drew the same objections now leveled at the use of fluorides. It should be said, however, that the validity of the iodine-goiter link, while apparent, is not uncontested and some authorities believe that hypothyroidism may be caused by congenital defects apparently of certain enzymatic systems.

In 1887, Kocher showed a case of Graves' disease demonstrating the excessive vascularity of the gland and suggested the symptoms were due to hyperfunction. In 1889, he had divided his cases into what he called ordinary goiter and malignant goiter and, at this time, added a third group, Graves' disease. This was the first time he mentioned hyperthyroidism. He had 225 cases of simple goiter with a mortality rate of 0.8%, 20 malignant cases with 3 deaths and 5 of Graves' disease with one death. Nine years later he had successfully operated on 69 cases of hyperplastic goiter with 4 deaths which was quite remarkable considering how little was known about the adequate preparation of these patients at that time.

It is interesting to note Kocher's pre- and postoperative care of goiter patients. He told the patients to use boiled drinking water and iodine as a prophylactic measure before operation. He was very careful about the amount of iodine these patients had because he believed too much iodine would make them toxic. Of course, at this time, one did not differentiate between nodular goiter and hyperplastic goiter, but

Kocher was so concerned about the toxicity of iodine that he even forbade its use in preparing the neck of the patient at the time of operation as an antiseptic. In instances of large colloid goiter the patient was also given 2 Gm. of thyroid extract daily. General anesthesia was avoided; he thought ether caused pulmonary edema. The skin was prepared with soap and hot water followed by alcohol, 70 percent. At first he used a vertical incision but then the famous collar incision became standard. He did not favor enucleation but did a resection, ligating all the vessels as he came to them. He was partial to one-sided operations in his anxiety to leave a sufficient amount of normal gland. When Holz, of Basel, operated in this manner on both sides he called the technic the bilateral Kocher operation. Drains were left in for 24 hours and stitches for 48 hours. From his private clinic Kocher reported a series of 302 consecutive cases of goiter operation without a wound infection.

It was at this time that Halstead, of Baltimore, visited Kocher's clinic and became very interested in the histologic picture of the thyroid gland. He described hyperplasia of the thyroid which he thought was synonymous with hyperactivity, described how the thick lining of the glands would decrease after iodine therapy and also reported that the lymphoid tissue in hyperthyroidism was greatly increased. The lymph nodes were enlarged and there was a lymphocytosis upon the blood examinations. Kocher relied greatly on the number of lymphocytes in the blood to tell the degree of toxicity. (Basal metabolic studies did not come into routine use in Kocher's clinic during his lifetime.) It was also noted that after these patients had been operated on for hyperplastic goiters, the goiters still showed the same microscopic picture years afterwards. Important as these histologic studies were they did not arouse as much interest as some of the physiologic discoveries that were occurring at this time.

In 1896, Vassale and Generali separated the entity of myxedema following thyroidectomy from that of tetany. Kocher was not particularly impressed with the role of the parathyroid glands in the cause of



tetany after a thyroidectomy. Among all of his cases he saw only a few manifestations of tetany and one serious instance proved to be transitory. He still believed that this was due to anoxia of the brain. This is interesting because Sandstroem had discovered the parathyroids in 1880. Probably because Kocher had so little trouble in his postoperative care he naturally turned to other aspects of the goiter problem.

In 1895, Kocher published a paper on the action of iodine upon the goiter and suggested that the thyroid must contain iodine. This was before Baumann had discovered it in the thyroid substance. Kocher could produce basal symptoms in thyroid-less patients by generous feedings of the extract but failed to do so by the administration of iodine. When he treated patients who had some thyroid left, even myxedema, he thought they developed hyperthyroid symptoms from large doses of iodine as well as from the extract. He believed that iodine could excite hyper-secretion of the gland. However, in the presence of a healthy thyroid, as well as in the colloid goiter, much iodine could be given without causing any symptoms, and furthermore it had no effect upon the degenerated tissue no matter how well supplied with blood. The iodine was found to be exclusively stored in the colloid. It was Kocher's opinion that in all cases of Graves' disease iodine medication should be regarded as a two-edged sword for it might do more damage than good. To further add to this opinion was the case of Marie Schuerch whom he operated upon on November 8, 1908. She was 28 years of age and had had a goiter for 7 years. Because of slight dyspnea on exertion she had applied salve at times. Four weeks before admission she had seen an advertisement "goiter cured over night," had secured the remedy and had rubbed her neck vigorously for 12 days. The patient began to have headache, hoarseness, pain in the neck, nausea, tremor and profuse sweats. Her pulse was 160, there was tremor of her hands, and she had lost 16 pounds in weight. Her hair began to fall out, she was excited, extremely impatient and had difficulty sleeping. She had the eye signs of Graves' disease. Kocher operated on this patient;

a adenoma the size of a small fist was removed, and the recovery was without event. Kocher believed that as a result of the massaging of this patient's neck, iodine was discharged and metabolized in the thyroid, thereby causing the symptoms. In analyzing this case, however, it may be questioned whether the massage of the neck had anything to do with it, or whether this patient was just going into an acute hyperthyroid stage regardless of what was done. However, this case made Kocher all the more cautious in the use of iodine in hyperthyroidism.

Kocher made an error about the role of iodine in hyperthyroidism; though most of his ideas about the use of iodine preoperatively are essentially correct. Also, while he may be criticized upon how much of the thyroid he removed, Kocher should be given most of the credit for putting the operative treatment of goiter on a rational basis. In 1911, Kocher published the results of 1200 operations on patients with Graves' disease with a 2% mortality and a 80% evidence of complete cures. In December 1909, he went to Stockholm to receive the Nobel prize for his work on the function of the thyroid gland. In 1917, two months before his death, he published a summary of all of his goiter work. He had operated on 6,000 simple goiters with a death rate of only 2 per thousand.

The next person who made great contributions to the treatment of goiter was Dr. Plummer of the Mayo Clinic. He put the use of iodine in the treatment of thyroid disease on a rational basis. It is true that Trousseau first described the effect of iodine on toxic goiter and interesting that this valuable information was gained through an error of giving iodine instead of digitalis to a patient with heart disease. Marine and Lenhart, in 1911, advocated its use in toxic cases but their idea was not accepted by the profession as a whole. In 1923, Plummer re-introduced the use of iodine in the preparation of patients having exophthalmic goiter for operation. Furthermore, he was the one who also made up a workable classification of goiter:—he classified goiter as simple colloid goiter; secondly, adenomatous goiter with or without hyperthyroidism;

and hyperplastic or exophthalmic goiter. He found that diffuse goiter could be treated by means of thyroid extract or with iodine. He had an idea that adenomatous goiters could be made hyperplastic by the use of iodine. He was quick to admit, however, that there was no difference microscopically between adenomatous goiters with hyperthyroidism and those without hyperthyroidism and he wondered if some of these patients might have something else present which would cause them to be hyperthyroid. He thought that the adenomatous thyroid with hyperthyroidism to be pure hyperthyroidism and that exophthalmic goiter represented hyperthyroidism plus a dysthyroidism. As a result of Plummer's work the mortality of operation in exophthalmic goiter went to an almost irreducible low.

The three greatest advances made in the treatment of exophthalmic goiter, since the time of Parry, Graves and Basedow are the determination of the basal metabolic rate, knowledge gained from Plummer's classification, and the effect of iodine.

The next advance in the treatment of goiter came with the use of antithyroid or goiter ogenic drugs. Persons receiving potassium thiocyanate as treatment for hypertension often became goitrous. It was also found that certain drugs of the thiourea derivatives did the same thing. The mechanism of the goitrogenic effect has generally been considered identical to the presence of an absolute lack of iodine, namely, that the cessation of production of thyroid hormone causes a fall in the concentration of thyroid hormone in the blood. This stimulates the thyrotropic activity of the pituitary with resulting hyperplasia of the thyroid. As in absolute lack of iodine, the hyperplasia of the thyroid does not lead to an increased production of hormone because of the continuing block due to the antithyroid drug. In this way we really have hyperplasia of the thyroid gland and hypothyroidism in the subject treated in this way. The goitrogenic action of any of these drugs can be prevented by administering thyroid. Not all of the antithyroid drugs tried successfully on animals are successful on human beings. Iodine can involute the hyperplastic

thyroid of Graves' disease under the effect of thiouracil. When iodine is given in Graves' disease after and during full treatment with thiouracil it can still involute the thyroid although it is no longer concentrated by the gland. It is said that the antithyroid drugs make the gland less vascular but there is no good controlled evidence to validate this.

The greatest advance in the treatment of thyrotoxicosis, of course, came with the use of radioactive iodine. This naturally followed the known beneficial effect of external radiation upon certain types of thyroid disease. Radioactive iodine is beneficial because the thyroid gland takes up iodine specifically, and the radiation can thus be implanted directly in the cells we wish to irradiate. In this way the radiation is much more effective in the tissues than can be provided from without. Induced radioactivity was discovered in 1934, and in that same year Fermi and his co-workers in Italy prepared radioactive isotopes of iodine. The first reports on the results of the use of radioactive iodine as treatment for thyrotoxicosis were those of Hertz and Roberts (1942) and Hamilton and Laurence (1942). These reports were made at the same meeting of the American Society for Clinical Investigation, a total of 13 cases being reported. In some of the earlier cases the patients received too heavy a dose and became severely myxedematous. Over the years our knowledge of the use of isotopes has made them effective therapy. In fact, as a result of the use of radioactive iodine, early Graves' disease is rapidly becoming a medical disease.

The use of radioactive iodine is not without some danger. We are still uncertain about the carcinogenic factor in the dosage and treatment of thyrotoxic diseases. At the present time the use of radioactive iodine in children and during pregnancy are contraindicated. In one series of 2230 patients, under the age of 16 years, who received therapeutic x-ray radiation to the head, neck and chest, between the years 1932 and 1950, malignancies occurred in 17 of the irradiated patients before the age of 23 and in 6 of 3777 siblings as controls. In the patient group, carcinoma of the thyroid



was found in 11 patients and one patient each had carcinoma of the parotid gland, submaxillary gland, nasal vestibule and breast. There was no thyroid cancer among the controls. It was interesting that 7 irradiated patients had benign adenomas of the thyroid and 3 benign osteochondromas. The controls had none. As an observation on the side, it is interesting that the irradiated patients showed a fivefold increase in circulatory diseases and a threefold increase in respiratory and nervous diseases and diseases of the blood forming organs as compared to the control group. Unexplained was the finding that the mortality rate from all causes was less in the irradiated group than the number expected. Most of the deaths in the sibling group occurred in the less than one year and the one to five year group. One explanation is that the excessive deaths in the control group were destined to become patients but died before coming to the attention of the radiologist.

Radioactive iodine can also be used as a diagnostic test for severity of the hypothyroidism as well as the therapeutic agent. Emotional response of the patient does not have much effect on the efficacy of the test. Animal experimentations tend to indicate that sufficient amount of antithyroid drugs or radioiodine may result in the production of benign adenoma of the thyroid or carcinoma or both. Clinical evidence, however, strongly suggests that thyroid cancer as a consequence of radioactive therapy for a toxic or nontoxic diffuse goiter, or its use in the normal gland is remote, although not entirely impossible. It is only with time that we will be able to establish this.

#### Summary

We have reviewed the therapy of thyroid disease in man, starting with the very early times when treatment was mostly cauterization or a "hit and miss" type of surgery, until the time of Kocher when surgery was put on a perfected technical basis.

Kocher stands out as the one who first charted the unknown course of thyroid disease to the time of Plummer, who put iodine therapy on a rational basis. We have noted the effect of the antithyroid drugs in hyperthyroidism and also the effect of radioactive iodine.

There are many unsolved problems. First of all we do not know what causes goiter, and in the case of hyperplastic goiter just where the endocrinologic imbalance is remains to be determined. From the advances which have been made in the treatment of hyperthyroidism with radioactive iodine, it is possible that certain types of goiter will be treated in the future by other therapeutic agents such as antisera, for example. Every man is a debtor to his profession; we are indebted to all of the men who have brought the treatment of thyroid disease up to its present rational therapy.

#### References for Reading

1. Halsted, W. S.: The Operative Story of Goiter. Surgical Papers by Wm. S. Halsted, Vol. 2, page 257. Baltimore, The Johns Hopkins Press, 1924.
2. McClendon, J. F.: Iodine and the Incidence of Goiter. Minneapolis, University of Minnesota Press, 1939.
3. Herman, A. H. and Bouman, M. D.: The Goiter Problem and Theodor Kocher, An Historical Study, *Journal-Lancet* 50:25, 1930.
4. Mayo, Charles H. and Plummer, Henry S.: The Thyroid Gland. The Beaumont Foundation Lectures. St. Louis, The C. V. Mosby Co., 1926.
5. Means, J. H.: The Thyroid and its Diseases. 2nd Ed. Philadelphia, J. B. Lippincott Co., 1938-1948.
6. Werner, Sidney C.: The Thyroid. New York, A. Hoeber-Harper, 1955.
7. Copenhaver, Nat H.: Peaks and Pioneers in the History of Thyroid, *Rhode Island M. J.* 21: 180, 1938.
8. Howard, R. M.: Epochs in the Study of Goiter, *West. J. Surg.* 42:479, 1934.
9. Crile, George, Jr., Mamwi, George J., Slaughter, Danely P., and Borowicz, Leonard: Symposium. Nontoxic Goiter, *Postgrad. Med.* 28:162, 1960.
10. Metabolic Shield. A Glimpse at the Thyroid. *MD.* 4:196, 1960.

## BOOK REVIEW

**The Basic Physics of Radiation Therapy.** By Joseph Selman, M.D., Department of Radiology, Southwestern Medical School, Texas. 646 pages, Springfield, Ill.: Charles C. Thomas, 1960. Price, \$14.50.

Dr. Selmon has attempted, in this volume, to present the basic principles underlying the use of radiation in clinical medicine. The early portion of the book is concerned with the mathematics of radiation therapy and of the physical factors controlling the delivery of x-ray to the patient. The

problems of x-ray quality, quantity and interaction with matter are covered quite well.

The author includes well-written chapters on the uses of radium, radon and radioisotopes. Following the recent trend in such books, the questions arising in the protection of patients and personnel in radio-therapy are discussed.

Of special interest to the practicing radiologist, are the sections on treatment planning and the usages of super-voltage therapy sources. Methods of radiation therapy such as grid therapy and rotational therapy are well presented. This section on therapy planning is the outstanding contribution in this work and should prove valuable for both practicing Radiologists and resident physicians who desire an accurate and readable summation of the current treatment methods.

This book as it stands is an excellent addition to the medical library. This reviewer hopes that Dr. Selmon will use this as a foundation for completing a future book utilizing radiation principles laid down in this volume.

**Epidemic!** By Frank G. Slaughter. Doubleday & Co., Inc., New York: 1961. Price, \$3.95.

Dr. Slaughter's latest novel of the medical profession is an exciting story of what might happen to New York City if an epidemic of plague should befall its people. Adding to the problems of health officials in combating the dread Black Death brought by flea-ridden rats on a tramp steamer which docked at New York City, are underworld warfare and Communist subversive tactics.

Interwoven is a love story in which surgeon Robert Trent and a world famous immunologist, Eric Stowe, are rivals for the affection of nurse Eve Bronson. The three unite their efforts with those of municipal officials to control the spread of the disease and eventually to eradicate it. After a thrilling climax in which a traitor in their midst is trapped and caught, all ends happily. The book is destined to be a best seller.

**Management of Hypertensive Diseases.** By Joseph C. Edwards, M.D., Assistant Professor of Clinical Medicine, Washington University School of Medicine, St. Louis. 420 pages. St. Louis: The C. V. Mosby Company, 1960. Price, \$15.00.

This book represents a laborious compilation of facts and studies related to almost every facet of hypertension. It is a clinical manual in which the author presents detailed regimens of immediate applicability, rather than general discussions.

Presentations are rather wordy. The chapter on heart disease with hypertension is basically a chapter on the treatment of heart disease irrespective of hypertension. The chapter on BKG in hypertension is devoted to BKG diagnosis in general. One place, however, where the protracted discussions are well used is in the diagnosis of hypertension. Considerable space is devoted to the many factors that may produce false blood pressure elevation including faulty cuffs, obese arms, and "casual" as opposed to "basal" recordings.

An interesting section is devoted to hypertension and pregnancy. Complete plans of management in both discussion and summary form are presented for both the toxemias and the hypertensive who become pregnant.

The pharmacology of antihypertensive agents is placed in the confines of one chapter, but recurs in many others. This, at times, appears to be useless repetition. Several typographical errors were noted, but none of any serious consequence, i.e., dosage schedules, etc.

The book is recommended to house officers and practitioners as a one-source reference on hypertensive problems and suggested regimens. It will have little interest to the pharmacologist or research worker not directly involved in the management of patients.

## ANNOUNCEMENTS

### Postgraduate Course in Infectious Disease at Vanderbilt University School of Medicine

The Department of Medicine is offering a Postgraduate Day on Thursday, February 8, 1962, to be held at Vanderbilt University Hospital, beginning at 9 a.m. "Selected Problems in Infectious Disease" will cover certain aspects of infections which pose problems in current practice. The dynamics and epidemiology of these diseases, their diagnosis, prevention and the use of antimicrobials in their management will be stressed.

The Course is approved for Category I credit by the American Academy of General Practice. Tuition is \$15.00 which includes the luncheon. For further information address the Department of Postgraduate Instruction, Vanderbilt University School of Medicine.

### Southeastern Chapter—The Society of Nuclear Medicine

The Southeastern Chapter of the Society of Nuclear Medicine will hold its 3rd Annual Meeting in Atlanta, Georgia on March 16 and 17, 1962. The meeting will be conducted in the auditorium of The Atlanta Academy of Medicine.

For further information, write to Dr. D. A. Ross, ORINS Medical Division, P. O. Box 117, Oak Ridge, Tennessee.

### American Board of Obstetrics and Gynecology

The next scheduled examinations (Part II), oral and clinical, for all candidates will be conducted at the Edgewater Beach Hotel, Chicago, Illinois, by the entire Board April 9 through April 14, 1962.

For complete information, write Robert L. Faulkner, M.D., 2105 Adelbert Road, Cleveland 6, Ohio.



### West Virginia Academy of Ophthalmology and Otolaryngology

The West Virginia Academy of Ophthalmology and Otolaryngology announces that its next regular meeting will be held at the Greenbrier Hotel, White Sulphur Springs, West Virginia, April 23-25, 1962.

The registration fee will be \$25.00 and for reservations contact the Hotel directly, or for further information write the Secretary, Dr. Worthy W. McKinney, 109 East Main Street, Beckley, West Virginia.

### Recently Licensed Physicians in Tennessee

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### IMPORTANT Your Next TSMA Annual Meeting

The 127th Annual Meeting of the Tennessee State Medical Association is scheduled to be conducted in the Peabody Hotel in Memphis, April 8-11, 1962.

Some new and interesting innovations are planned for the next meeting, so mark the date now, even though the event is three months away

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## PLACEMENT SERVICE

*The Placement Service of the Tennessee State Medical Association is designed to assist doctors and communities to get together. Further information and contacts to both physicians and communities are available from the Public Service Office, 112 Louise Avenue, Nashville 5, Tennessee.*

### Locations Wanted

A 37 year old married general practitioner with training in thoracic surgery would like to establish practice in east Tennessee Community 30,000 or over. Will consider group, clinical, associate or institutional practice. Graduate Yale University. Catholic. Residency training. Available immediately. LW-402

A 33 year old married physician, presently in the Air Force, would like to establish associate practice in Ob-Gyn with physician in Tennessee community of 25,000 or over. Graduate University of Tennessee School of Medicine. Three years residency. Tennessee license. Available immediately. LW-414

A 33 year old married general practitioner would like to establish partnership of solo practice in east Tennessee community of any size. Protestant. Graduate University of Texas School of Medicine. Available with 30 days notice. LW-416

A 50 year old married, Board certified surgeon would like to establish general, thoracic, endoscopy surgery practice with associate. Would also consider clinical or private practice. Protestant. Graduate Syracuse University School of Medicine. Will consider any section of Tennessee, any size. Available upon notice. LW-418

A 30 year old married physician would like to establish practice in pediatrics in middle or west Tennessee community of 5,000 or over; either associate, assistant, or solo. Baptist. Graduate Vanderbilt School of Medicine. Available August 1962. LW-420

A 32 year old married Internist (Cardiology) would like either clinical or associate practice in Tennessee community containing or near medical school. Residency training. Methodist. Graduate Bowman Gray of Wake Forest. Available July 1962. LW-421

A 30 year old married physicians would like to associate with another physician in the practice of ob-gyn in any size community with no preference as to locality. Now in residency. Protestant. Graduate University of Tennessee. Tennessee license. Available fall of 1962. LW-422

A 28 year old married physician would like to become associated in clinical general practice in any size community in middle Tennessee. Protestant. Graduate University of Tennessee. Presently serving as Flight Surgeon USAF. Tennessee license. Available July 1962. LW-424

A 34 year old general practitioner, Board eligible in anesthesiology with two years residency, would like clinical or associate practice in east Tennessee community of 20,000 to 100,000. Protestant. Graduate Medical College of Georgia. Available upon notice. LW-428

A 29 year old married physician would like to become associated in the practice of urology in clinic in Tennessee community of 40,000 and up. No preference as to locality. Four years residency. Presbyterian. Graduate University of Texas Medical Branch. Available July 1962. LW-429

### Physicians Wanted

Physician in east Tennessee town of 30,000 would like associate general practitioner, with some surgical training. Office space and equipment provided. PW-127

Small southern Tennessee community of slightly over 500 in great need of general practitioner. Much larger trade area. No other physician in community. Office space and some equipment available. PW-147

Small Tennessee community of 1,200, with trade area up to 15,000, located in the southern part of middle Tennessee, needs a general practitioner. Two other physicians in community. Excellent opportunity for young physician wishing to establish good practice. Office space and housing readily available. PW-151

Southeastern community of 10,000 in need of a general practitioner. Office space available with six months free rent. Eighteen miles from larger city. Good location. PW-154

Physician in middle Tennessee town of 7,000 in need of general practitioner to assume practice for a one to two year period to enable him to enter residency. Alternating residency training, possible partnership later would be considered. Rental basis for office and equipment. Excellent opportunity. PW-157

Physician, with experience in general practice as well as OB and/or surgery, needed in middle Tennessee community of 12,000. Will furnish office space, utilities and telephone. Eighteen bed hospital available. Age 30-45. Associate or assistant status. PW-158

One year's free rent offered to one or two physicians wishing to locate in a thriving east Tennessee community with trade area of 35,000. Seventy-five bed hospital; near TVA dam and recreational area. PW-165

Physician in east Tennessee town with trade area of approximately 40,000 would like associate general practitioner. New, unused, fully equipped 22 room office (suitable for clinic) only 100 feet from lake front. Hospital in area. One year's internship required. PW-166

Two practicing Internists in large eastern city desire associate to work into full partnership. Large, modern, well-equipped office in a down town medical office building. Internist with three years residency, under 36 years of age, willing to start on good straight salary for one year (starting salary open) needed. PW-167

Physician in east Tennessee city of 2,000 would like to share office and equipment with general practitioner. Good housing facilities available. Hospital within fifteen miles. PW-169

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## Poliomyelitis Immunization In Davidson County\*

CHARLES F. FEDERSPIEL, Ph.D. and JOHN J. LENTZ, M.D.,† Nashville, Tenn.

*This paper illustrates a recently introduced method of statistical sampling in a community, which can be done rapidly and with untrained personnel. "Cluster sampling" represents the selection of sampling units which are dwellings. This method has disadvantages as well as advantages. Such sampling has been done for the first time in Tennessee.*

One important function of the local health officer is to know how vigorously and in what areas of the population he should expend his resources in order to bring about maximum benefit to the people he serves. In the case of communicable diseases for which protection is available in the form of a vaccine, a knowledge of vaccination levels in various subgroups of the population is essential in establishing an efficient vaccination and health education program. There is a great advantage in being able to point to current, locally pertinent data in advising the layman of the lack of protection which exists in the community and its importance to him.

Although fairly reliable estimates of vaccination levels are available for the school age population, it is much more difficult to

reliably assess vaccination status among the preschool and adult populations. A recent paper in the American Journal of Public Health<sup>1</sup> describes a survey technique designed to assess the level of poliomyelitis vaccinations among various subgroups of an urban population. Surveys of this kind have been carried out in over 40 communities throughout the United States. The survey described below was the first to be done in Tennessee and was carried out in Davidson County in August, 1960.

### Methods

The general procedure which was followed in the Nashville survey was closely patterned after that given by Serfling and associates.<sup>2</sup> The sampling design used depends on selecting the sampling units (dwellings) in groups and is known as cluster sampling. It would be appropriate at this point to mention some of the advantages and deficiencies of this approach. The primary advantages are that such a survey can be carried out very rapidly with relatively untrained personnel, and the results can be tabulated almost immediately. The most important disadvantage is that we must assume that there is no correlation among dwelling units around a single sampling point. If this assumption is not valid, some bias may arise in the estimates of precision of the vaccination rates which we derive. It should also be pointed out that in areas where the density of housing is small, a dwelling has a greater chance of being selected for the sample than would be the case in an area where housing density is large.

It was decided to interview about 250

\* Presented at the meeting of the Tennessee Public Health Association, Statistics Section, October 5, 1961, Nashville, Tennessee.

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is shown in figure 2. Individuals were classified into socio-economic groups based on an index using education of head of household, persons per room, and number of baths as determining factors. In addition to this, each household was classified socio-economically on a subjective basis by the individual interviewers immediately after the survey had been completed. The results using this subjective index agreed closely with those in which the objective index was used. The few disagreements in grouping appeared in cases where the objective index gave obvious misclassifications. Although this method of classification may seem somewhat arbitrary, it obviated clas-

sifying a household according to the census tract in which it was located. The latter procedure required adoption of the rather questionable assumption that the dwellings of a given census tract were socio-economically homogeneous.

The interviews were carried out over a three day period. Follow ups by telephone and revisitation, in cases of households where no one was home initially, required an additional day.

Results

A tabulation of the number of dwelling units visited and the number of completed interviews is given in table 1. The number

POLIOMYELITIS IMMUNIZATION SURVEY

(1-3)

(4-6)

|                           |  |                   |                      |         |                  |
|---------------------------|--|-------------------|----------------------|---------|------------------|
| Date of Interview         |  | Interviewer (7-8) |                      |         |                  |
| Street Address            |  | (9-11)            | Census Tract (12-15) |         | (16)             |
| Name of Head of Household |  | Last              | First                | Initial | Telephone Number |

Respondent (17)

1 \_\_\_\_ HH Head

2 \_\_\_\_ Spouse

3 \_\_\_\_ Parent

4 \_\_\_\_ Sibling

5 \_\_\_\_ Child

6 \_\_\_\_ Other, Specify \_\_\_\_\_

Race (19)

1 \_\_\_\_ White

2 \_\_\_\_ Non-white

Reason for Non-Interview (18)

1 \_\_\_\_ Refusal

2 \_\_\_\_ Not at Home

3 \_\_\_\_ Other, Specify \_\_\_\_\_

Data obtained during (20)

1 \_\_\_\_ First Visit

2 \_\_\_\_ Later Visit

3 \_\_\_\_ Telephone Call

|                              |          |   |             |                        |                        |                  |                            |
|------------------------------|----------|---|-------------|------------------------|------------------------|------------------|----------------------------|
| Number in Household (21-22)  | Sex (25) |   | Age (26-28) | Polio Vaccination (29) |                        |                  |                            |
|                              | 1        | 2 |             | None                   | Number of Inoculations | Number Not Known | Vaccination Status Unknown |
| Persons in Household (23-24) | M        | F |             | 0                      |                        | 8                | 9                          |
| 1.                           |          |   |             |                        |                        |                  |                            |
| 2.                           |          |   |             |                        |                        |                  |                            |
| 3.                           |          |   |             |                        |                        |                  |                            |
| 4.                           |          |   |             |                        |                        |                  |                            |
| 5.                           |          |   |             |                        |                        |                  |                            |
| 6.                           |          |   |             |                        |                        |                  |                            |
| 7.                           |          |   |             |                        |                        |                  |                            |
| 8.                           |          |   |             |                        |                        |                  |                            |
| 9.                           |          |   |             |                        |                        |                  |                            |
| 10.                          |          |   |             |                        |                        |                  |                            |
| 11.                          |          |   |             |                        |                        |                  |                            |

Number of Rooms (30-31)

Number of Private Bath Rooms (32-33)

Family Physician (34)

Yes

No

Schooling of H.H. Head (35)

Grade \_\_\_\_

Jr. High or High School \_\_\_\_

College \_\_\_\_

(36)

(37)

(38)

(39)

(40)

(41)

(42)

(43)

FIGURE 2. INTERVIEW FORM. DAVIDSON COUNTY POLIOMYELITIS IMMUNIZATION SURVEY, AUGUST 1960



of refusals and the single case of a household where no one could be contacted are not extraordinary. In a few cases, it was obvious that the respondent or the interviewer was confused, in which case the data were not included in the calculations.\* It is quite probable that some undetectable misinformation is included in the tabulations which follow.

Summary of Findings in the Davidson County  
Poliomyelitis Immunization Survey  
August 15-17, 1960

Table 1

| NUMBER OF DWELLING UNITS AND<br>COMPLETED INTERVIEWS |     |
|--|-----|
| Number of units visited                              | 320 |
| Number not at home                                   | 1   |
| Number of refusals                                   | 4   |
| Number with unreliable or<br>incomplete information  | 3   |
| Number of completed interviews                       | 312 |
| First visit  | 285 |
| Later visit  | 10  |
| Telephone  | 17  |

Table 2 gives the composition of the sam-

Table 2

| CHARACTERISTICS OF THE SAMPLE              |  |          |         |
|--|--|----------|---------|
| Socio-economic Group<br>(subjective index) |  | Families | Persons |
| White Population                           |  |          |         |
| Upper                                      |  | 37       | 140     |
| Middle                                     |  | 116      | 391     |
| Lower                                      |  | 49       | 245     |
| Total                                      |  | 202      | 776     |
| Nonwhite Population                        |  |          |         |
| Upper                                      |  |          |         |
| Middle                                     |  | 27       | 79      |
| Lower                                      |  | 83       | 345     |
| Total                                      |  | 110      | 424     |
| Number of units visited                    |  | 320      | 285     |

ple in terms of individuals and families broken down by race and socio-economic group. A table based on the objective index of socio-economic status gives a similar breakdown into the socio-economic groups. It might be noted here that our aim in selecting the type of sample we wanted was quite good in spite of the striking population and housing changes which had occurred since 1950. Our selection was based on census tract data from the 1950 census.

\* Had 6 injections

Table 3

POLIOMYELITIS INOCULATIONS BY RACE, AGE, AND SOCIO-ECONOMIC LEVEL  
(Subjective Socio-economic Classification)

| Age                  | Socio-econ.<br>level | Total<br>persons | 0   | 1-2 | No. of inoculations |    |    | unk | 3 or more<br>% | %    |
|----------------------|----------------------|------------------|-----|-----|---------------------|----|----|-----|----------------|------|
|                      |                      |                  |     |     | 3                   | 4  | 5  |     |                |      |
| White population     |                      |                  |     |     |                     |    |    |     |                |      |
| < 5                  | Upper                | 6                | 0   | 1   | 2                   | 2  |    | 1   | ***            | ***  |
|                      | Middle               | 39               | 4   | 14  | 8                   | 6  | 4  | 3   | .500           | .078 |
|                      | Lower                | 34               | 11  | 5   | 10                  | 6  |    | 2   | .500           | .137 |
| 5-14                 | Upper                | 36               | 0   | 0   | 9                   | 25 | 1* | 1   | 1.000          | .000 |
|                      | Middle               | 71               | 1   | 0   | 23                  | 43 | 4  |     | .985           | .057 |
|                      | Lower                | 89               | 8   | 4   | 33                  | 34 |    | 10  | .848           | .048 |
| 15-39                | Upper                | 34               | 3   | 2   | 16                  | 11 |    | 2   | .844           | .088 |
|                      | Middle               | 122              | 47  | 10  | 41                  | 12 |    | 12  | .482           | .054 |
|                      | Lower                | 68               | 33  | 4   | 11                  | 10 | 1  | 9   | .373           | .081 |
| > 40                 | Upper                | 62               | 48  | 2   | 6                   | 4  |    | 2   | .167           | .064 |
|                      | Middle               | 156              | 139 | 2   | 4                   | 3  |    | 8   | .047           | .018 |
|                      | Lower                | 53               | 49  |     | 1                   |    |    | 3   | .020           | .020 |
| No age given         |                      | 6                | 3   |     |                     |    |    | 3   |                |      |
| Non-white population |                      |                  |     |     |                     |    |    |     |                |      |
| < 5                  | Middle               | 6                |     | 1   | 1                   | 3  |    | 1   | ***            | ***  |
|                      | Lower                | 58               | 27  | 14  | 12                  | 5  |    |     | .293           | .080 |
| 5-14                 | Middle               | 11               |     |     | 5                   | 4  |    | 2   | ***            | ***  |
|                      | Lower                | 88               | 13  | 7   | 20                  | 26 |    | 22  | .697           | .098 |
| 15-39                | Middle               | 16               | 6   |     | 3                   | 3  |    | 4   | ***            | ***  |
|                      | Lower                | 92               | 47  | 9   | 10                  | 9  |    | 17  | .253           | .066 |
| > 40                 | Middle               | 46               | 31  | 2   | 2                   |    |    | 11  | .057           | .039 |
|                      | Lower                | 98               | 87  | 1   |                     | 1  | 1  | 8   | .022           | .022 |
| No age given         |                      | 9                | 9   |     |                     |    |    |     |                |      |

\*\*\* Data insufficient for meaningful comparisons.

\* (For example, one respondent said that her husband had received Salk vaccine while in the Army in 1952.)

Interviews of 312 families netted information on exactly 1200 individuals.

The inoculation status for various age and socio-economic groups is given in table 3. Like table 2, this table is based on the subjective socio-economic index. The last two columns give the percentages having three or more Salk injections and the standard deviations of these percentages respectively.

It will be noted that those with vaccination status or number of injections unknown were not included in calculating the percentages with three or more injections. The breakdown of these 121 "unknown" responses is given in table 4 by respondent and race. Since there were almost twice as many whites as nonwhites interviewed, the proportion of "unknown" responses was much greater in the nonwhite group.

Table 4

UNKNOWN VACCINATION STATUS OR NUMBER OF INJECTIONS UNKNOWN BY RESPONDENT AND RACE

|                   | White | Non-white | Total |
|-------------------|-------|-----------|-------|
| Head of household | 11    | 19        | 30    |
| Spouse            | 13    | 27        | 40    |
| Parent            | 6     | 4         | 10    |
| Sibling           | 1     | 2         | 3     |
| Child             | 11    | 11        | 22    |
| Other             | 14    | 2         | 16    |
| Total             | 56    | 65        | 121   |

### Discussion

Although one can calculate from table 3 the percentages for those having no inoculations, we will confine ourselves to the percentages having three or more and refer to it as the inoculation rate. Figure 3 gives the inoculation rates in graphical form for the various age groups among the 4 sampled populations.

In the upper white socio-economic category the differences among the various age groups were not significant except for the greater than 40 group. In the remaining socio-economic categories differences between those under 5 and the 15 to 39 group are not significant. Otherwise, the differences among age groups in corresponding socio-economic categories are significant and reflect the efficacy of the vaccination program in the school age population.

Within each socio-economic category the differences in inoculation rates between the 40 and over group and the other age groups

POLIOMYELITIS INOCULATION RATES IN DAVIDSON COUNTY, TENNESSEE, BY AGE AND SUBPOPULATION GROUP, AUGUST, 1960

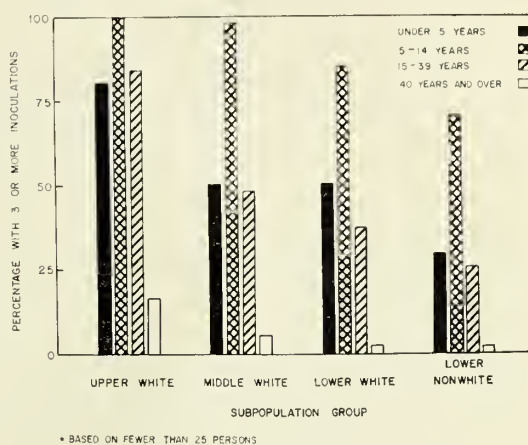


Fig. 3

were highly significant. Regardless of race or socio-economic classification, the individuals in this age group have not been influenced to obtain Salk vaccine.

In the lower socio-economic group, the inoculation rates in the nonwhite population are not significantly different from those in the white population, although they are considerably lower in the younger age groups. The consistency of such differences suggests that they may be real rather than due to sampling fluctuations.

Some comment on the varying percentages for the various socio-economic groups in a given age classification is in order. In the group less than 5 years of age, the inoculation rates are identical for the middle and lower socio-economic categories, and the limited number of individuals sampled in the upper socio-economic category precludes comparisons between it and the other two. It should be remarked, however, that only one individual among the 6 sampled in the upper socio-economic preschool group had less than three injections. This individual was an infant too young to have undergone the full series.

In both the school age group and the age group greater than 40, a significant difference in rates exists between those in the upper and lower socio-economic categories. In the 15 to 39 year age group the rates in the upper socio-economic category were significantly higher than those in either of the other two categories.



### Summary and Conclusions

From table 3 one can conclude that the poliomyelitis vaccination program in Davidson County is quite efficacious among the school age group; that the lower socioeconomic segment of the colored population appears to be less well protected than its white counterpart although such differences may not be statistically significant; and that in those individuals less than 40 years of age, some significant differences in inoculation rates exist among the various socioeconomic groups.

As was indicated previously, the ease with which this survey was carried out recommends it as a tool for evaluation and planning. The need for continued evaluation is, of course, one aspect of successful planning. For example, the present survey seems to point up the need for continued vigilance in the preschool group and dictates the use of selective health education media to reach those individuals in the nonwhite and lower socio-economic groups who would profit

most from the services available from the health department.

A survey such as this might also be well advised in the face of a local polio epidemic. It could be useful in providing data with which comparisons of morbidity data might be made after the epidemic or perhaps as an indicator for the most effective areas in which to establish clinics where oral vaccine might be made available.

### References

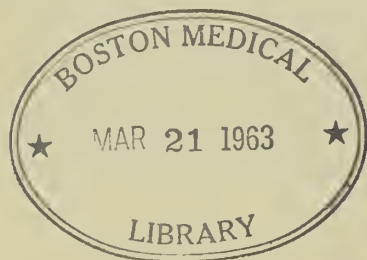
1. Serfling, R. E., Cornell, R. G., and Sherman, I. L.: The CDC Quota Sampling Technic with Results of 1959 Poliomyelitis Vaccination Surveys, *Am. J. Pub. Health* 50:1847, 1960.
2. Serfling, Robert E., Cornell, Richard G., Sherman, I. L. and Cohen, A.: Manual for Conducting an Immunization Survey in an Urban Area. Special Publication, Communicable Disease Center, U.S. Public Health Service, Department of Health, Education, and Welfare, 1959.
3. United States Census of Population, 1950, Bulletin P-D 34.
4. United States Census of Housing, 1950, Bulletin H-E 118.

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#### Simultaneous Recording of Intravesical and Intra-Urethral Pressure: A Study on Urethral Closure in Normal and Stress Incontinent Women—G. Enhörning. *Acta Chir Scand—Supplement 276* (Pages 1-68) 1961.

Stress incontinence is the condition in which there is adequate urethral closure at rest but leakage when the intra-abdominal pressure is increased by physical stress such as coughing. The author examined 205 women in 140 of whom there was no objective leakage and in 65 there was leakage during coughing in the lithotomy position. Thirty of the 205 women were examined on the sixth day after delivery. In every woman of the series the greatest intra-urethral pressure at rest was higher than the simultaneously recorded intravesical pressure. During coughing, however, the intravesical pressure rose so that in many cases it exceeded the resting intra-urethral pressure. The intra-urethral pressure also increased in each case, and for all the normal women it remained higher than the bladder pressure. In the incontinent women, however, the intra-urethral

pressure increased less than the bladder pressure, so that the difference fell practically to zero. Recordings made while the person was "holding urine" showed that the voluntary muscles are capable of increasing the intra-urethral pressure without at the same time increasing the bladder pressure. Passive inflation of the lungs of women who had been anesthetized and given an apneic dose of succinylcholine chloride showed that an increase in intra-abdominal pressure could be transmitted to the urethra, the proximal part of which is above the pelvic floor. In the incontinent women, intra-abdominal pressure could not have been completely transmitted to the urethra during coughing since intra-urethral pressure increased less than did the intravesical pressure. This deficient transmission may be due to a variable combination of 2 factors: weakening of the circular or spiral muscles of the intrapelvic urethra, and reduced power of the tissues in the anterior vaginal wall to counteract sharp rises in intra-abdominal pressure. The beneficial effect of the surgical treatment for the stress incontinence may be attributed chiefly to a reinforcement of these tissues.



This describes a very new and apparently, at times, a hazardous tool available for the intraocular coagulation of tissues by a sharply focused source of light. It is the same principle as using the sun's rays focused by a hand lens to produce burning. Much experience will be needed for a rational selection of cases for treatment by this method.

## The Indications for Light Coagulation\*

J. WESLEY McKINNEY, M.D., Memphis, Tenn.

### Introduction

Ophthalmology owes a debt of gratitude to Dr. Gerd Meyer-Schwickerath for the idea and the development of the apparatus for a new method of treatment, light coagulation.

As children we have all had the experience of burning a piece of paper by the sun's rays focused through a simple magnifying glass. Solar burns of the macula have long been observed in persons watching an eclipse without sufficient protection. This burn of the retina is produced by the rays of the sun focused or concentrated on the retina by the cornea and lens of the eye.

The technic of coagulation by light developed by Meyer-Schwickerath<sup>1</sup> is essentially a source of light of the visible spectrum having twice the intensity of the rays of the sun. The rays of light controlled as to intensity, size of application and time of exposure are passed through an ophthalmoscopic attachment which permits direct observation during treatment.

This new tool is ideally suited to the treatment of many deep lesions of the eye. It is to be remembered, however, that only pigmented tissues will absorb enough light for coagulation to take place. Unpigmented tissues merely cause a scattering or reflection of light. Therefore, enough heat is not generated to cause coagulation. Opacities of the media may interrupt the light sufficiently to limit its effectiveness.

### Indications

In treating retinal lesions the light passes through the transparent internal layer of the retina and is absorbed in the pigment epithelium and choroid. The heat generated secondarily affects the potentially separated

retina. It is obvious, therefore, that the retina must be in contact with the choroid to produce adherence.

These facts suggest various applications—and at the same time limitations—of light coagulation.

### Retinal Holes and Degenerations

1. Extramacular holes without detachment.
2. Equatorial degeneration in a second eye.
3. Second eye after aphakic detachment.
4. Macular holes.
5. Detachment with complete settling on bed rest and binocular bandaging.
6. Supplementary in connection with external procedures.
7. Retinal tears with contusion or perforation.
8. Retinoschisis.

The possibilities of light coagulation have given impetus to the study of the peripheral retina both by direct and indirect ophthalmoscopy with wide dilatation of the pupil. Patients who have a retinal detachment in one eye should have a detailed search of the retina of the other eye immediately, and periodically thereafter for holes and areas of degeneration predisposing to the formation of holes. Various authors have reported the occurrence of retinal separation in the second eye in from 14 to 26% of cases. Closing holes in the equatorial retina by light coagulation is a prophylactic measure which is practically without danger and should always be practiced. Equatorial degeneration of the retina which predisposes to the formation of holes may be walled off completely so if a hole should be torn in the degenerated retina no detachment would take place.

In the event of an aphakic detachment in one eye, careful consideration of the use of light coagulation of the peripheral retina of the second eye is indicated. If the lens of the second eye is sufficiently clear, light coagulation should be performed in anticipation of cataract extraction. If the lens

\* Read at the meeting of the Tennessee Academy of Ophthalmology and Otolaryngology, April 11, 1961, Chattanooga, Tenn.



opacity is too dense the peripheral retina is treated as soon after cataract extraction as feasible. The procedure is carried out in two sittings, first one-half and then the other half of the retinal periphery being treated.

One might reasonably ask, "Why subject the patient to a possibly unnecessary procedure in cases of peripheral degeneration only?" The answer, I believe, is two-fold. In the first place light coagulation of the peripheral retina, properly applied, is practically innocuous. In the second place the high percentage of detachments in a second eye, and the frequency with which they involve the macula before reaching the surgeon dictate the prophylactic measure which is now available.

The question of macular holes poses a somewhat different problem. Looking at them with the slit-lamp and Hruby lens one often has the impression that they are true holes. But the fact that retinal detachment so rarely begins at these holes indicates that they are not complete perforations of the retina and that light coagulation is unnecessary.

On the other hand a macular hole in association with a retinal detachment from a peripheral tear must be sealed. In this situation a scleral buckling is always indicated to close the peripheral tear. Upon evacuation of subretinal fluid and completion of the buckle, the macula should be in apposition to the choroid and the hole should be immediately closed by light coagulation.

It occasionally happens, in instances of recent retinal detachment, that upon bed rest and binocular bandaging the retina settles so completely that the tear is in apposition to the choroid and can be closed by light coagulation. At the same time other areas of peripheral degeneration may be coagulated.

Light coagulation may be used to supplement scleral buckling in cases wherein a tear is far posteriorly, or wherein insufficient diathermy has been applied in a critical area because of the presence of a vortex vein.

Light coagulation may occasionally be used to limit a recurrent detachment or primary detachment when the health of the

patient contraindicates a more extensive procedure.

Tears of the retina following contusion or perforating injury may be sealed off and closed if vitreous hemorrhage does not interfere.

Retinoschisis is a comparatively rare bilateral peripheral degeneration of the retina which may be sealed off by light coagulation. Application is made in the good retina to surround the lesion from ora to ora.

#### Vascular Lesions of Retina

1. Periphelebitis retinae (Eale's disease)
2. Angiomatosis retinae (von Hippel-Lindau disease)
3. Early Coat's disease

*Periphelebitis Retinae* (Eale's disease)—The etiology of this condition is uncertain. Treatment is therefore directed toward the elimination of the visibly diseased blood vessel to prevent recurrent vitreous hemorrhages and retinal detachment. Light coagulation is admirably suited to obtain this result when the vitreous has cleared. The involved vessel, clump of new formed vessels or aneurysms may be completely destroyed. Vessels which have proliferated into the vitreous may be destroyed at the point of origin or the light may be accurately focused on the vessel itself in the vitreous.

It is well to remember that although this disease usually involves only one eye, early changes may be detected in the other eye and should be carefully looked for.

*Angiomatosis Retinae* (von Hippel-Lindau disease)—Light coagulation is the ideal method of treating this condition since it is possible to completely destroy the tumor in its earlier stages. Several sittings may be necessary for large tumors. The large blood vessels feeding the angioma are to be avoided. They will return to normal size after treatment and the exudates will disappear. It is to be remembered that these lesions are often multiple and the appearance of new tumors is not infrequent. Angiomas of the optic nerve must be destroyed despite the danger to central vision and field, because they show rapid and extensive growth.

*Coat's Disease*—In the early stage of aneurysms and neovascularizations the

process may be arrested by light coagulation.

#### Tumor of the Fundus Oculi

1. Retinoblastoma
2. Malignant melanoma of the choroid

*Retinoblastoma*—This tumor presents a number of special considerations. Radiotherapy combined with triethylene/melamine (TEM) has proven to be an effective form of treatment for the second eye. Light coagulation also has its place.

Radiotherapy must be used with the larger tumors and those near the macula since light coagulation cannot reach to the depths of a large tumor, and since the retina immediately surrounding a retinoblastoma must be sacrificed to cut off the blood supply. Only tumors at some distance from the macula may be coagulated. Disadvantages of radiotherapy are possible damage to the lens and late bone changes, although the latter have been reduced with the use of TEM. Light coagulation has neither of these disadvantages and furthermore may be used in cases in which radiotherapy has failed to completely destroy the growth. In either case repeated examinations under general anesthesia are necessary so early treatment of recurrences or new tumors may be instituted.

*Malignant melanoma of choroid*—In most cases this tumor has progressed too far at the first examination to be amenable to light coagulation. The melanoma, however, which shows no more than six diopters of elevation and does not involve the ciliary body may be destroyed by light coagulation. It is sometimes necessary to use a combination of light coagulation and surface diathermy to effect destruction of the tumor.

#### Inflammatory Processes of Choriorretina

*Localized chorioretinitis*—The localized granulomatous lesions of retinochoroiditis may be destroyed by light coagulation if the vitreous is not too clouded over the lesion. Just how close to the macula is it safe to coagulate a lesion? I do not know the answer to this surely, but experience has shown that coagulation can be very accurately placed in the posterior regions of the fundus and that the effect of the heat does not spread much beyond the spot of application. It is reasonable to suppose that or-

ganisms such as toxoplasma, the tubercle bacillus and the like might be completely destroyed, thus greatly shortening the course of the disease and preventing recurrences.

#### Anterior Segment Coagulation

1. Making new pupil in aphakia.
2. Destruction of iris tumors.

Light coagulation may be used for two conditions of the iris, namely, to fashion a new pupil in the updrawn iris and to destroy small tumors or cysts of the iris. A special attachment which permits focusing on the iris is furnished with the coagulator.

The making of a new pupil is limited to the updrawn iris of aphakia since the heat necessary to coagulate the iris would produce a cataract in the underlying lens. Coagulation of the well pigmented iris is accompanied by actual boiling of the tissues which explode with an audible pop with immediate production of a hole. Less pigment and more fibrous tissue in the iris make coagulation less certain. More than one coagulation may be necessary. Appearance of the new pupil may not occur until necrotic tissue has been separated.

Small tumors of the iris which have not extended into the angle may be destroyed. In this case a localized opacity of the lens is produced. It is, however, peripheral and not progressive.

Light coagulation has been proposed for the destruction of surface lesions, but it seems to me that surgical diathermy is much more applicable and that light coagulation is uniquely suited to intraocular lesions.

#### Comments

Light coagulation is not an easy procedure. The apparatus is large and about as maneuverable as a gravel truck. The light spot must be accurately placed on the retina. It is often surprisingly difficult to find and keep in view a peripheral retinal lesion which was easily seen with the hand ophthalmoscope. Many rabbits suffered under our clumsy attacks before humans were treated.

Advantages of this method of treatment, when indicated, are many. It appeals to the patient because there is no cutting. The entire procedure is sometimes carried out with



only a drop or two of topical anesthetic. The patient is not apprehensive about repeated treatments because he found the first to be without pain or discomfort. It appeals to the surgeon because he has been given an effective tool with which he can treat deep lesions of the eye with minimal trauma and graduated effect accurately placed under direct vision.

### Summary and Conclusions

The indications for light coagulation have been reviewed. Retinal holes, tears and certain peripheral degenerations, which are known to lead to detachment of the retina are best treated by light coagulation.

Several types of retinal vascular lesion are particularly suited to light coagulation.

Localized retinal and choroidal tumors and inflammations may be destroyed.

A new pupil may be made in the updrawn iris of aphakia and small iris tumors may be destroyed.

### Reference

1. Meyer-Schwickerath, G.: *Light Coagulation*, St. Louis, C. V. Mosby Co., 1960.

### Discussion of

#### Dr. J. Wesley McKinney's Paper

William F. Murrah, M.D.

Dr. McKinney has done a good job in bringing before this group the general indications for which the Meyer-Schwickerath light coagulator has been used. Within the past year and a half, the literature has contained several articles giving indications for its use, and the experiences of those individuals who have been using it.

There is some controversy, as to whether it should be used in some conditions and, no doubt, it is being used today in conditions and in situations in which it might well be left alone. I am sure that complications of its use and damage to the retina, vitreous, and cornea are being done by the light coagulator. The frequency of these complications may depend to a large extent on whether its use is restricted or pernicious, and on the general skill, experience and judgment of the operator.

I, personally use, and strongly advocate, the use of the photocoagulator when it is indicated clinically, but I have a healthy respect for this powerful tool. Each time I use it I have a certain amount of trepidation, realizing that its use is not without the possibility of complications, and that I have to justify myself before using it, and that the end or goal in sight far outweighs the consequences of possible complications. A minimal amount of energy for each burn, along with the

fewest planned applications to achieve the desired goal, must be adhered to if one is to keep from getting into trouble.

I must disagree with Dr. McKinney's statement that "light coagulation of the peripheral retina, properly applied, is practically innocuous." I agree with Dr. Donald Shafer's remark, who being asked for his opinion about using preventive treatment with the light coagulator, stated he would be very careful about cases submitted for light coagulation. "It is precisely innocuous as is fire. Most times it serves us well, cooking our food, but sometimes it can burn the house down."

A number of retinas have been pulled off by photocoagulation of the peripheral retina in the hands of capable ophthalmologists with good judgment and previous experience in using the photocoagulator, since retinal burns produced by the photocoagulator cause shrinkage of retinal tissues and can cause shrinkage and contracture of the vitreous.

I fully agree with Dr. McKinney that peripheral retinal tears, without retinal detachment, should be burned with the photocoagulator. However, I further qualify this statement to explain that the tears which are the most dangerous, as likely causes of retinal detachments, are those in the upper retinal hemisphere which are seen to have a traction band extending from the operculum with a pull inward. These, in my opinion, definitely should be burned since their chances of causing detachment is better than 90 percent. There is less indication for burning those peripheral tears below, which show no traction. Dr. Shafer, and others, feel these should be watched, for most of them will not produce detachment.

In Dr. Pischell and Dr. Colyear's series of retinal tears without detachment, approximately 30% were found eventually to lead to detachments.

As to how holes in the macula should be treated, —frequently what appears to be a hole is only a cyst of the macula, and if this condition is treated with photocoagulation the back of the cyst, when burned, will show a slight grayishness indicating there is retinal tissue present. If on burning, this is not found, it is a true hole. Dr. Pischell believes, and I am sure others will agree, that if vision is 20/200 or poorer, as a result of a macular hole, it should be treated since vision will not be made worse and the hole will be sealed.

I have not had the experience of sealing off a macular hole in association with a peripheral retinal hole. Often what appears to be a macular hole, along with the presence of a peripheral hole, turns out not to be a hole after one seals off the peripheral hole, for the macula is then found to be back in place with no appearance of a hole. Therefore, I would be very hesitant in photocoagulating what was thought to be a macular hole at the time of operation for repair of a peripheral hole.

Use of the photocoagulator as a supplement at the time of an operation for retinal detachment and during the early postoperative period, as a supplement to such an operation, should be em-

phasized as one of its major and most important uses. We have used it on several occasions and think it has been a definite help in insuring the sealing off of one or more retinal tears.

In treatment of retinoblastoma with the photocoagulator, the ideal cases are those in which the tumor is very small; with larger ones its use is debatable. We know of one case where a large retinoblastoma was treated by the photocoagulator, and shortly thereafter metastasis were noted in the vitreous. In this country the use of the photocoagulator in treating malignant melanoma is debatable, and as yet there is insufficient clinical data concerning its value in treating inflammatory retinal foci.

I thoroughly agree with Dr. McKinney in use of the photocoagulator for producing a hole in the iris, although suitable clinical cases are few. But, emphasis must be given to the fact that this is a procedure not undertaken without caution and a certain amount of risk, for a number of corneal

burns, which often leave permanent corneal scars, have resulted from the use of the photocoagulator in burning anterior segment lesions, and these have occurred even in the hands of experienced operators.

We do not use a topical anesthetic in the eye when doing photocoagulation, or use a speculum unless scleral depression is needed. The use of a speculum and a topical anesthetic, predisposes to drying and clouding of the cornea, an unwanted situation during photocoagulation.

We believe retrobulbar anesthesia, prior to photocoagulation, is necessary; attempts to avoid its use generally end in a prolonged procedure with poor cooperation and much discomfort on the part of the patient. The light is extremely bright, and almost all patients cannot endure it without the light dulling effects produced by retrobulbar anesthesia.

I wish to thank Dr. McKinney for asking me to discuss this timely subject.

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**Factors in Myocardial Rupture. An Analysis of Two Hundred and Four Cases at Los Angeles County Hospital between 1924 and 1951. G. C. Griffith, B. Hegde, and R. W. Oblath. *Am. J. Cardiol.* 8:792, 1961.**

In 57,162 routine autopsies performed at the Los Angeles County Hospital between 1924 and 1960, 3,103 hearts (5.5%) had one or more unhealed infarcts. Cardiac rupture had occurred in 215 instances (6.9% of myocardial infarcts and in 0.4% of all autopsies). Myocardial rupture rarely occurs under age 50 years. Though usually reported to occur more frequently in men, in this study the incidence was higher in women (53.9%). In negro patients myocardial rupture is relatively rare.

A reasonably good correlation was obtained between the electrocardiographic indication of acute myocardial infarction and myocardial necrosis seen at necropsy. Myocardial rupture occurred at or immediately adjacent to the site of necrosis, appearing most frequently from the second to the tenth day after infarction. The most frequent site of rupture was in the anterior wall especially at its junction with the septum. Death usually occurred immediately in ventricular rupture, but with interventricular septal rupture most of the patients survive a few days.

This study indicated that in the past 8 years there had been a sharp decrease in the incidence of myocardial rupture. The use of anticoagulants had not increased the incidence of rupture, but cardiac tamponade was relatively frequent in patients with myocardial rupture maintained on anticoagulants. The point was made that the physician must be alert for signs of tamponade (i.e., pulsating neck veins, increase in cardiac dullness, etc.) as this condition can be managed surgically. Because patients with perforation of the interventricular septum may live for some time after perforation has occurred, operative correction of the defect is possible if correct early diagnosis is made. In a patient who has suffered a recent infarction, septal perforation should be suspected by the sudden appearance of a loud precordial systolic murmur (heard most clearly in the lower left parasternal area and radiating over the precordium with diminishing intensity) closely resembling that of a congenital interventricular septal defect, together with the precipitous decline in the patient's condition and signs of peripheral collapse with predominately rightsided heart failure. (Abstracted for the Middle Tennessee Heart Association by William Ewers, M.D., Nashville.)



# Oral Manifestations of Leukemia

JAMES F. SMITH, D.D.S., Ph.D., Memphis, Tenn.

The leukemias represent blood diseases in which there is an increase in the number of leukocytes, especially immature cells, in the bone marrow and in the peripheral blood.<sup>1</sup> When the neutrophilic series of cells are involved, the disease is known as myelogenous or granulocytic leukemia, while the type which is manifest by an increase in lymphocytic cells is called lymphatic leukemia, and the third type involving monocytes is called monocytic leukemia.

The oral manifestations in all types of leukemia occur early in the course of the disease and may be the first sign of the disease.<sup>2</sup> The oral changes in patients with the chronic leukemias are nonspecific in contrast to those in patients with the acute forms of leukemia. Local gingival hemorrhages may cause the patient to seek dental consultation, and unnecessary dental procedures may aggravate the situation and give rise to exacerbation of acute symptoms.<sup>3</sup> For this reason early diagnosis is of utmost importance.

*Myelocytic Leukemia.* There is an increase in the number of leukocytes of the granulocytic or myelogenous series of unknown cause. The acute and chronic forms of myeloid leukemia present different clinical features.

Acute leukemia is a rapidly fatal disease which may occur at any age but usually affects the male in childhood or in early youth. (Fig. 1). The white cell count may be 15,000 to 30,000 per cu. mm. or higher. Eventually anemia, usually normochromic and normocytic, develops. Thrombocytopenia, manifested by bleeding tendencies, appears early in some instances of the disease. The onset of the disease is usually abrupt, and a sore throat, pallor, fever, headaches, petechiae, anorexia and weakness are among the clinical findings. Lymphadenopathy, splenomegaly and hepatomegaly are sometimes present.

The chronic form occurs more frequently



FIG. 1. Gingival hyperplasia in acute leukemia in a child, diagnosed as of the myelogenous variety. Note gingival hyperplasia on mandibular molar area.

in the older age group than the acute form, and generally runs a fatal course in four to five years, but survival may vary from one to several years. The findings in the oral cavity are related to thrombocytopenia and other blood changes such as leukemic infiltrations.

In the acute form there is sometimes marked hypertrophy of the gingival tissue, which may completely cover the surfaces of the teeth. There is a marked tendency for spontaneous hemorrhage, and continual oozing is present. Necrosis of the gingiva and ulcerations covered with a pseudomembrane are common as are areas of ecchymoses and petechiae. (Fig. 2.) Secondary infections are common and severe toothache may be present. Loosening of the teeth is seen more frequently in patients with chronic myeloid leukemia.<sup>4</sup>

*Lymphatic Leukemia.* This type of leukemia is also of unknown etiology, and in its acute form is a rapidly fatal disease running a course of from one to six months in untreated patients. The disease appears most frequently in young males one to 8 years of age, and the findings of anemia, thrombocytopenia, arthralgia, fever, generalized lymphadenopathy are usually present. The white cell count is increased and

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FIG. 2. Acute leukemia of 12 weeks duration, of an undetermined type due to the anaplasia of the cells. Note gingival hyperplasia and spontaneous hemorrhage.

may reach 100,000 per cu. mm. with a majority of the cells being primitive lymphoid cells.

The *chronic form* of lymphatic leukemia is most common in later life. The disease has a variable course and patients live for many years with or without treatment. Replacement of the bone marrow by lymphoid tissue may eventually produce hypoplastic anemia and death. The total leukocyte count ranges about 200,000 to 250,000 per cu. mm.

The oral findings in acute lymphatic leukemia are similar to those of acute myeloid leukemia.

*Monocytic Leukemia* is not as well defined clinically as are the other forms of leukemia, and it is less common. The etiol-

ogy is unknown and the course of the disease is usually rapid with a fatal termination about six to eight months after symptoms appear. The white cell count rarely exceeds 100,000 per cu. mm., and 60 to 70% of the cells are monocytes. Progressive anemia and thrombocytopenia develop early and the spleen and lymph nodes may be enlarged. Hepatomegaly is a relatively common and prominent finding and bone marrow may demonstrate disruption of architecture with hyperplasia of large monocytic cells. The mouth frequently manifests the first signs of the disease with inflammation and hypertrophy of the gingiva, ulcer formation, petechiae, and ecchymosis.<sup>5, 6</sup>

Summary

The oral manifestations of leukemia have been described. A series of 17 patients diagnosed as suffering from leukemia have been presented with a summary of their oral manifestations in table 1.

References

1. Ackerman, L. V.; Regato, J. A.: Cancer, C. V. Mosby Co., St. Louis, 1954.
2. Clandra, J. C.: Oral Manifestations of Blood Disease, Ann. Dent. 16:109, 1957.
3. Ferry, G. F., and Douglas, J. W.: Oral Treatment in Acute Leukemia, J. Am. Dent. A. 53:713, 1956.
4. Rettberg, W. A. H.: Symptoms and Signs Referable to the Oral Cavity in Blood Dyscrasias, Oral Surg., 6:614, 1953.
5. Sinrod, H. S.: Leukemia as a Dental Problem, J. Am. Dent. A. 55:809, 1957.
6. Wentz, F. M.: Oral Manifestations of the Blood Diseases, J. Am. Dent. A. 44:698, 1952.

Table I  
LEUKEMIA

| Patient | Age | Sex | Race | Type        | Acute or Chronic | Oral Manifestations                            |
|---------|-----|-----|------|-------------|------------------|--|
| 1       | 5   | M   | W    | Unknown     | Acute            | Gingival bleeding, ulceration and bogginess    |
| 2       | 48  | M   | W    | Lymphocytic | Chronic          | None   |
| 3       | 38  | M   | W    | Lymphocytic | Chronic          | Gingival bleeding                              |
| 4       | 6   | M   | W    | Stem cell   | Acute            | Loosening of teeth, gingival ulceration        |
| 5       | 9   | M   | W    | Unknown     | Acute            | Loosening of teeth, gingival ulceration        |
| 6       | 11  | M   | W    | Myeloid     | Acute            | Gingival bleeding, ulceration, loosening teeth |
| 7       | 54  | F   | W    | Lymphocytic | Chronic          | None   |
| 8       | 43  | M   | W    | Lymphocytic | Chronic          | None   |
| 9       | 48  | F   | W    | Monocytic   | Chronic          | None   |
| 10      | 6   | M   | W    | Unknown     | Acute            | Gingival bleeding, ulceration, hyperplasia     |
| 11      | 7   | M   | W    | Unknown     | Acute            | Loosening of teeth                             |
| 12      | 9   | M   | W    | Myeloid     | Acute            | Loosening of teeth, gingival bleeding          |
| 13      | 39  | M   | W    | Myeloid     | Acute            | Loosening teeth, boggy gingivae                |
| 14      | 44  | F   | W    | Myeloid     | Chronic          | None   |
| 15      | 58  | M   | W    | Lymphocytic | Chronic          | None   |
| 16      | 61  | M   | W    | Lymphocytic | Chronic          | None   |
| 17      | 68  | M   | W    | Lymphocytic | Chronic          | None   |



## CLINICAL NOTES FROM THE TENNESSEE HEART ASSOCIATION

### CORONARY INSUFFICIENCY

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A relationship between chest pain and disease of the heart was noted as early as the fifth century A.D., by Caelius Aurelianus.<sup>1</sup> The symptom complex of angina pectoris due to underlying coronary artery disease, was suggested by Jenner<sup>2</sup> in a letter to Heberden in 1778:

"The dissections of patients who have died of angina pectoris throw but little light upon the subject. Though in the course of my practice, I have seen many fall victims to this dreadful disease, yet I have only had two opportunities of an examination after death. In the first of these I found no material disease of the heart, except that the coronary artery appeared thickened. As no notice had been taken of such a circumstance by anybody who had written on the subject, I concluded that we must still seek for other causes as productive of the disease; but about three weeks ago, Mr. Paytherus, a surgeon at Ross, in Herefordshire, desired me to examine with him the heart of a person who had died of the angina pectoris a few days before. Here we found the same appearance of the coronary arteries as in the former case. But what I had taken to be an ossification of the vessel itself, Mr. P. discovered to be a kind of firm fleshy tube, formed within the vessel, with a considerable quantity of ossific matter dispersed irregularly through it. This tube did not appear to have any vascular connection with the coats of the artery, but seemed to lie merely in simple contact with it. As the heart, I believe, in every subject that has died of the Angina Pec-

toris, has been found extremely loaded with fat; and as these vessels lie quite concealed in that substance, is it possible this appearance may have been overlooked? The importance of the coronary arteries, and how much the heart must suffer from their not being able duly to perform their functions, (we cannot be surprised at the painful spasms) is a subject I need not enlarge upon, therefore shall only just remark that it is possible that all the symptoms may arise from this one circumstance."

During the past century, the evolution of coronary artery disease has been divided into three phases: angina pectoris, coronary insufficiency, and coronary occlusion. Coronary insufficiency is not a clinical entity, as angina pectoris is due to *transient* coronary insufficiency. Coronary insufficiency should be considered a significant, prolonged hemodynamic alteration between the blood supply to and the blood requirements of the myocardium. Various combinations of physiologic disturbances and pathologic states are involved in the development of coronary insufficiency. These are shown in table 1.

The cardiovascular system fortunately maintains a coronary reserve which is the differential between the basal coronary blood flow and the maximum blood flow during a maximum work load. If the coronary reserve is diminished to the point where the flow is inadequate, any further depletion of the blood supply or increase in the work of the myocardium results in coronary insufficiency, with subsequent myocardial anoxia and necrosis.

The symptoms of acute coronary insuffi-

Table 1. CORONARY INSUFFICIENCY

| I. Reduction in Coronary Blood Volume      | II. Decrease in Coronary Perfusion Pressure                               | III. Increase in Work of Myocardium       | IV. Decrease in O <sub>2</sub> Saturation or O <sub>2</sub> Transport Capacity |
|--|---|---|--|
|  | A. Lowering of Aortic Diastolic Pressure <sup>3</sup>                     |   |  |
|  | B. Decrease in Cardiac Output   |   |  |
| 1. Coronary atherosclerosis <sup>3</sup>   | 1. Aortic insufficiency   | 1. Aortic stenosis <sup>4</sup>           | 1. Pulmonary diseases  |
| 2. Polyarteritis nodosa                    | 2. Pulmonary-aorta communication  | 2. Mitral stenosis                        | 2. Right to left shunts  |
| 3. Syphilis of Coronary ostia <sup>3</sup> | 3. Ruptured Sinus of Valsalva aneurysm into the right ventricular chamber | 3. Massive pulmonary embolism             | 3. Severe anemia <sup>3,4</sup>  |
| 4. Emboli to coronary artery               |   | 4. Extensive myocarditis                  | 4. Carbon monoxide poisoning <sup>5</sup>                                      |
|  |   | 5. Intracardiac obstructive lesions       | 5. Severe hemorrhage   |
|  |   | a. Myxomata                               | 6. High altitude flying (above 15,000 feet) <sup>6</sup>                       |
|  |   | b. Thrombi                                | 7. Polycythemia vera <sup>7</sup>  |
|  |   | 6. Obstructive pulmonary arterial disease |  |
|  |   | 7. Shock                                  |  |
|  |   | 8. Constrictive pericarditis              |  |
|  |   | 9. Myocardial failure                     |  |

ciency are indistinguishable from those due to coronary occlusion; however these symptoms are not followed by the typical electrocardiographic findings or abnormal laboratory determinations associated with myocardial infarction. There is the sudden onset of severe substernal pain that radiates to the neck, jaw, down one or both arms or through to the back. The pain is more intense and more prolonged than the pain of angina and usually persists for at least 15 to 30 minutes and may last for several hours. The pain may be followed by profuse perspiration, vomiting, or shock. The administration of nitroglycerin is of little value and usually meperidine or morphine sulfate are required for satisfactory relief of the pain. Occasionally the pain that follows a catastrophe, such as a large pulmonary embolus, may overshadow the pain that occurs from subsequent coronary insufficiency or acute coronary insufficiency may even occur without severe pain. In either case the electrocardiographic findings suggesting coronary insufficiency are present. The usual electrocardiographic changes consist of ST-segment depression followed by diphasic or inverted T-waves. Recently, however, Ekmekci and associates,<sup>8</sup> demonstrated in the dog's myocardium both ST-segment depression and elevation, depending upon the degree of coronary insufficiency and subsequent myocardial ischemia. With severe ischemia, ST-segment elevation was found rather than depression. These authors further demonstrated that hemorrhagic hypotension, following ligation of a large coronary artery, resulted in a further increase in the ST-segment elevation over the affected cyanotic area of myocardium and that widely scattered islands of ST-segment depression appear in a centrifugal pattern over both ventricles. ST-segment elevation over the cyanotic area decreased and the islands of ST-segment depression disappeared upon restoration of normal blood pressure, which emphasizes the deleterious effect of shock in acute coronary occlusion and the importance of maintaining an adequate systemic blood pressure. Ekmekci and collaborators,<sup>9</sup> also found in patients, and experimentally in animals, an increase in the R-wave and a reciprocal decrease in the S-wave with severe myocardial ischemia fol-

lowing acute insufficiency. The electrocardiographic changes were most evident at the maximum area of ischemia and progressively decreased with peripheral recording. Hypotension from hemorrhage following coronary occlusion produced an additional increase in the R-wave and a reciprocal decrease in the S-wave. These changes were reversible with return to normal systemic pressures by transfusions. Following coronary insufficiency and hemorrhagic hypotension, the electrocardiogram occasionally demonstrated a depression of the ST-segment, a decrease in the R-wave, and an increase in the S-wave. The R and S-wave changes with ST-segment depression are opposite to those seen with ST-segment elevation. Increases in the R-wave and decreases in the S-wave were noted with severe acute ischemia which may be of clinical significance. When a decrease in the R-wave and an increase in the S-wave occurred, ischemia was less severe in that particular area of the myocardium.

### Conclusion

A better understanding of acute coronary insufficiency is achieved when one considers the underlying hemodynamic changes and pathologic states that are involved in this clinical syndrome. Serial electrocardiograms and laboratory determinations are helpful but not always diagnostic in the differentiation of angina pectoris, coronary insufficiency and myocardial infarction.

### References

1. Aurelianus, Caelius: *On Acute Diseases and on Chronic Diseases*; Edited and Translated by I. E. Drabkin, Chicago, Univ. of Chicago Press, 1950.
2. See Baron, J.: *The Life of Edward Jenner*, M.D. H. Colburn, London, 1838, p. 39.
3. Keefer, C. S. and Resnik, W. H.: Angina pectoris: Syndrome Caused by Anoxemia of Myocardium. *Arch. Int. Med.* 41:767, 1928.
4. Friedburg, C. K. and Horn, H.: Acute Myocardial Infarction not Due to Coronary Artery Occlusion, *J.A.M.A.* 112:1675, 1939.
5. Colvin, L. T.: Electrocardiographic Changes in a Case of Severe Carbon Monoxide Poisoning. *Am. Heart J.* 3:484, 1928.
6. Benson, O. O., Jr.: Coronary Artery Disease: Report of Fatal Cardiac Attack in a Pilot While Flying, *J. Aviation Med.* 8:81, 1937.
7. Kahn, M. H.: Etiologic Factors in Angina Pectoris, *Am. J. M. Sc.* 172:195, 1926.



8. Ekmekci, A., Toyoshima, H., Kwoczynski, J. K., Nagaya, T. and Prinzmetal, M.: Angina pectoris V. Giant R and Receding S Wave in Myocardial Ischemia and Certain Non-ischemic Conditions, *Am. J. Cardiol.* 7:521, 1961.

9. Ekmekci, A., Toyoshima, H., Kwoczynski, J. K., Nagaya, F. and Prinzmetal, M.: Angina pectoris IV. Clinical and Experimental Difference Between Ischemia with ST Elevation and Ischemia with ST Depression. *Am. J. Cardiol.* 7:412, 1961.

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**Structure of Glomerular Capillaries in Proteinuria.**

J. Churg et al. *Arch. Intern Med.*—Vol. 109:97 (Jan.) 1962.

Proteinuria is frequently accompanied by changes in the walls of glomerular capillaries, demonstrable by electron microscopy. These changes involve all 3 components of the wall, that is, the epithelial cells (podocytes), the basement membranes, and the endothelial cells, often in a manner characteristic of a particular disease entity. The endothelial cells show edema, sometimes causing obstruction of the lumen. The epithelial cells show fusion of foot processes and loss of foot process material. The basement membrane shows thickening, or conversely thinning, splitting into 2 or more layers, and formation of spike-like projections (membranous transformation). Various types of deposit can be observed within the capillary wall. Cases illustrating changes of glomerular capillaries in idiopathic nephrotic syndrome, glomerulonephritis, systemic lupus erythematosus, diabetes, toxemia of pregnancy, and other renal diseases are presented, and the role of the individual component of the capillary wall in proteinuria is discussed. It is believed that all 3 components play a role but that changes in the basement membrane are of primary importance.

**The Abstinent Alcoholic.** D. L. Gerard, G. Saenger, and R. Wile. *Arch. Gen. Psychiat.*—Vol.

6:83 (Jan.) 1962.

A follow-up study of 300 patients with a drinking problem was conducted. Only 17% of them sustained abstinence as long as one year. These abstinent patients are in "better" health, have better employment and family relations than those who did not become abstinent. However, the majority of these abstinent patients are psychiatrically overtly disturbed or functioning with gross inhibitions and limitations in their personal relationships. A minority has a sense of identity, comfort and purpose through total involvement with Alcoholics Anonymous, and another small group has achieved a measure of identity, comfort and purpose without any institutionalized source of support. It was noted that prolonged abstinence may be associated with gross mental disturbance and maladjustment. It was also noted that both social improvement and abstinence were practically never related to either the acquisition of insight or to personal growth within a formal psychotherapeutic context.

## STAFF CONFERENCE

### John Gaston Hospital\*

#### Acute Intestinal Obstruction (Case 1.)

DR. HARWELL WILSON: Gentlemen, our first patient this afternoon is a young child with some interesting findings. This patient will be presented by Dr. Parrish.

DR. ROBERT PARRISH: This 2 year old boy was admitted to John Gaston Hospital Oct. 2, 1961, with an onset of diarrhea approximately 7 days before admission. Three months prior to this time, the patient was seen by a local doctor and given medicine for intestinal worms, following which he passed approximately 50 worms. The parents had since noted the passage of about two worms per week. Five days before admission, he was given the same medication but vomited shortly thereafter. The medication was again administered 3 days later. This was followed by progressive abdominal distention, nausea, severe anorexia, lethargy, and cessation of bowel movements. His past history was essentially negative.

*Physical examination* on admission showed a pulse of 140, which was thready and weak, R. of 60 per min. and a B.P. of 90/70. His T. was 97.8°. The patient appeared critically ill, very dehydrated and lethargic. Examination of the chest was negative except for a sinus tachycardia and a rapid, shallow respiratory rate. Examination of the abdomen revealed marked, generalized distention; there were no bowel sounds. There was generalized abdominal tenderness on palpation but no masses were felt. Rectal examination revealed the ampulla to contain soft, brown feces and one large live ascaris was removed at this examination.

*Laboratory findings* on admission revealed a hematocrit of 41, WBC. count of 11,200 with a shift to the left. No eosinophils were present. BUN. was 24 mg. per 100 ml., chlorides 108 and CO<sub>2</sub> 20 m Eq/k.

DR. WILSON: Dr. Parrish certainly makes a good case for the diagnosis of intestinal obstruction in this infant, and he also mentioned the fact that there is a history of patient passing worms and a worm has been extracted from the rectum. Would anyone like to offer a definite diagnosis at this time? It seems rather obvious that we will have to suspect ascariasis as a cause of the difficulty; but, as you know, sometimes when the diagnosis seems obvious, there are other things that may be the cause of the difficulty. Dr. Tyson, what do you feel will prove to be the most likely diagnosis in this patient?

DR. WILLIAM T. TYSON: It seems that, with the definite finding of the ascaris, it is most likely that this is the cause of the patient's obstruction. However, other things that must be considered in children as a cause of obstruction are ingestion of foreign bodies, intussusception, appendiceal abscess, complications due to Meckel's diverticulum or perhaps even a congenital anomaly and, in rare instances, a small bowel tumor.

DR. WILSON: Dr. Tyson, I think you covered the subject very well. It isn't fair to mention all of the different possibilities. However, in fairness to you, you really believe that this patient's obstruction is due to ascariasis. Is that correct?

DR. TYSON: That is correct.

DR. WILSON: Dr. Parrish, suppose you show the X-rays to us and see if this gives us any more definite information.

DR. PARRISH: We can see from the chest and abdominal films that there is marked elevation of both diaphragms due to massive abdominal distention caused by distended small bowel. (Fig. 1.) The lung fields appear to be clear on this film, and the heart shadow is normal. There are multiple loops of distended small bowel, and

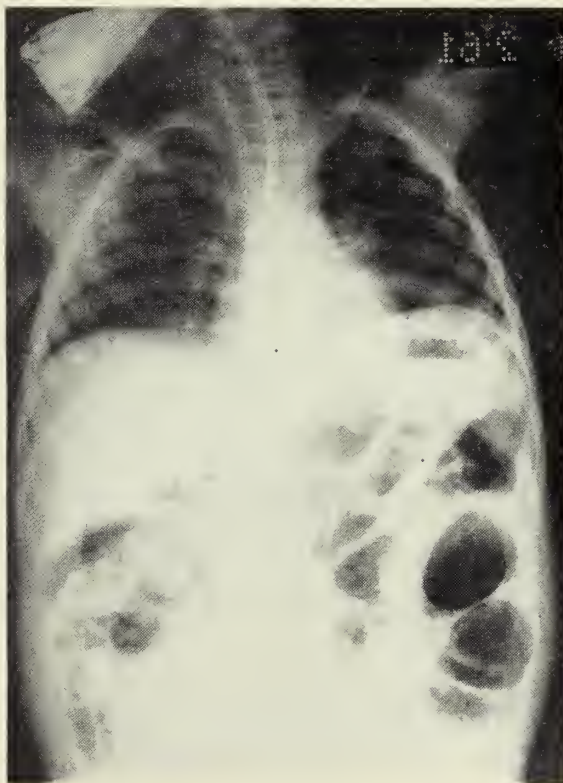


FIG. 1. Evidence of intestinal obstruction due to ascariasis.

\* From the Department of Surgery, University of Tennessee College of Medicine, Memphis, Tenn.



there can be seen innumerable objects comparable with ascaris within the lumen of the gut.

DR. WILSON: I believe that both the surgical staff and the radiology staff on review of this film came to the conclusion that the patient's intestinal obstruction was due to ascariasis and this, of course, simply confirms the clinical impression. The radiologist thought that there was actual evidence in this film that the bowel was not viable. Dr. Parrish, on just what findings did the radiologist base this opinion?

DR. PARRISH: On this film there are several loops of small bowel that show dissection of air between the mucosa and the serosa of the bowel wall. This was thought to be due to lack of viability with leakage of air from the destroyed mucosa out into the superficial layers of the bowel wall.

DR. WILSON: Dr. Bryant, would you describe the operation for obstruction which was carried out on this patient. The operation was actually done, I believe, by Dr. Parrish, but Dr. Bryant was with him.

DR. JOE BRYANT: After adequate hydration, the patient was explored through a right rectus incision. On entering the peritoneal cavity, approximately 50 cc. of serosanguineous fluid was noted. There was obvious gangrene with perforation of approximately 4 feet of small bowel extending down to within 8 inches of the ileocecal valve. Within this acutely impacted segment of distended, gangrenous bowel were literally hundreds of round worms. Other worms were palpable above and below the gangrenous segment. Because of the poor condition of the patient and the presence of numerous worms in the remaining viable bowel, the gangrenous segment was rapidly removed and the resected ends brought out through the lower portion of the incision as a Mikulicz's enterostomy.

DR. WILSON: This exteriorization procedure is relatively unusual on our service in patients of this age. However, the subsequent course of the patient, I believe, has justified this management of caring for the patient. I believe you are the attending surgeon on the service, Dr. Wrenn. Would you like to comment on this patient?

DR. EARLE WRENN: Dr. Wilson, I was not present when Dr. Parrish operated on

this patient, but I am in complete accord with his method of management. Very sick children with intestinal obstruction which has required several hours of preoperative treatment are frequently in very poor condition to withstand a large intestinal resection and anastomosis. The prolonged period of ileus and poor bowel function postoperatively would jeopardize the child's well being. A more rapid recovery from the initial phase of the operation can be expected if, as was done in this instance, the exteriorization type of procedure is carried out. I think the mortality and morbidity in such cases of intestinal obstruction, particularly with gangrenous intestine, can be improved by handling the cases in this fashion.

DR. WILSON: We are always glad to have Dr. Kim from the Department of Pathology with us. Dr. Kim, would you be so good as to comment on the specimen and show us any interesting material you may have from this case.

DR. YOON KIM: The segment of the intestine was very congested, bluish to tan, and measured 113 cm. in length. The serosa was covered by a thin film of exudate. Adult ascaris worms were found scattered throughout the lumen but approximately 95 cm. length of the intestine was actually obstructed by an entangled mass of ascaris worms. The wall over this area showed early necrotic change. One hundred forty-five worms were counted and the largest one measured 35 cm. in length. Microscopically, most of the wall revealed necrotic changes of varying degree except for the area at each end of the specimen where there was viable tissue.

DR. WILSON: Thank you, Dr. Kim. I think that the two plastic bags of ascaris being passed around by Dr. Kim is a rather spectacular demonstration in itself, and this coupled with the X-ray makes this a truly unusual case. (Fig. 2.) Dr. Sherman, would you like to comment on this case?

DR. ROGER SHERMAN: I'd like to comment on the method of management which is proven by the end result in this case. I must admit its new to me—the concept of Mikulicz procedure for intestinal obstruction in children when viable bowel for anastomosis after resection is present. It has

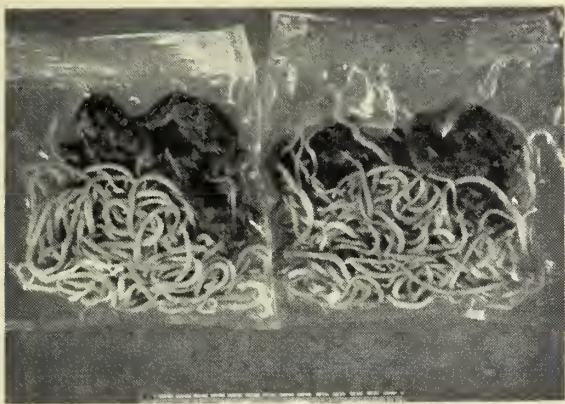


FIG. 2. Worms removed at time of operation.

worked very well on our service and I am much impressed, however, it probably takes as much time to form the spur as to do a primary anastomosis. I would like to ask if this is the type of ascaris infestation which is associated with pulmonary disease in children.

DR. WILSON: Dr. Wrenn, would you like to comment on Dr. Sherman's question?

DR. WRENN: A number of parasitic worms and organisms produce allergic manifestations in patients and the pneumonia which is sometimes seen, or perhaps we should say the so-called pneumonia, is thought to be an allergic eosinophilic reaction in the lungs. In most cases, this is a transient phenomenon, although some deaths in small children have been attributed to it. This is sometimes known as Loeffler's syndrome and it can be due to this type of ascaris.

DR. WILSON: Dr. Parrish, what is your plan with reference to closing the enterostomy on this patient?

DR. PARRISH: We plan on closing this ileostomy in about five to seven days after the patient's condition is stabilized post-operatively and will probably do a bowel resection and restoration of continuity with end-to-end anastomosis.

DR. WILSON: Of course, if there is rapid fluid loss, the spur can be crushed in this small child in a manner similar to that used in crushing the spur in the adult. However, I personally feel that there is a smaller margin of error when applying a spur crushing clamp to a child who has a bowel of very small lumen. Of course none of us have the opportunity to use this method in either adults or children as frequently as

we employed it a number of years ago, before present methods of bowel antisepsis and technics of bowel surgery were so well developed.

DR. GEORGE LIVERMORE: Many children today are receiving vermifuges rather indiscriminately, and I would like to know if there is any relationship between the vermifuge and the onset of obstruction in this child. Is the choice of drug important in this situation, or is the fact that the child may have a very severe infestation with worms important in our decision as to whether to treat them medically before they have obstruction?

DR. WILSON: Dr. Wrenn, would you like to comment?

DR. WRENN: I imagine that most children who are treated for ascariasis these days receive one of the piperazine derivatives which are thought to be fairly ideal drugs for the eradication of ascaris. A single dose is frequently sufficient to rid the child of his worms. In the past, however, many drugs which did not do a good job of killing most of the worms, have been used. Frequently, the worms were stimulated into unusual activity and intestinal obstruction was a more frequent consequence of the treatment of worms.

DR. WILSON: I believe Dr. Sherman also raised the question as to whether or not obstruction might be more likely to occur following the use of a vermifuge. Actually, from our experience on the service here, I believe that I am correct when I say that we have had patients operated upon for intestinal obstruction secondary to ascariasis who have not received a vermifuge, just as we have had other patients where obstruction seems to have been produced, as in this case, by a large mass of dead worms. One question that has not been raised is the question as to the danger of worms passing out through the site of anastomosis or closure of the bowel following removal of worms at the time of operation. Dr. Wangenstein has made a number of us aware of the fact that occasionally worms may actually crawl out through the site of anastomosis, though I have never personally seen this occur. Dr. Lee, have you ever observed this to occur in your experience?

DR. WILLIAM LEE: I have observed one



such instance while at the Medical College of South Carolina in Charleston. A patient who had an incidental appendectomy during an abdominal operation was subsequently re-explored because of the onset of localized peritonitis, and a round worm was observed partially extruded from the closure of the appendectomy stump.

DR. WILSON: Thank you, Dr. Lee. We will have a subsequent report on this patient at Grand Rounds next week to hear about the child's condition following closure of the enterostomy.\*



#### Cystadenoma of Liver (Case 2.)

DR. HARWELL WILSON: The second patient this afternoon will be presented by Dr. Williams.

DR. OLIN WILLIAMS: This 62 year old colored woman was admitted to the John Gaston Hospital from the West Tennessee Cancer Clinic, where she had been referred by her family physician because of an enlarging right upper quadrant mass. She gave a history of first noting the enlargement at least 25 years previously. There were no symptoms associated with it until one year before admission, when enlargement of the mass was noted. It had continued to grow during the past year, and occasional episodes of sharp, shooting right upper quadrant pain were noted during this time. Also approximately a year ago, she had noticed some jaundice which cleared spontaneously after several days. The only other symptoms elicited were concerned with some difficulty in initiating urination during the past 4 years. There had been no previous serious illnesses or operations.

On *physical examination*, she was a moderately obese woman with a B.P. of 150/110, and normal temperature, pulse, and respirations. Grade I hypertensive retinopathy was present. No abnormality of the heart or lungs was noted. The abdomen was obese with a large, irregular, slightly tender, nodular mass in the right upper quadrant which extended 10 cm. below the right costal margin and moved with respirations. No other abnormalities of the abdomen were present. Except for a moderate cystocele and rectocele, pelvic and rectal examinations were not remarkable.

Routine *laboratory studies*, blood chemistries, stool examinations, and liver function tests were normal except for an 18% retention of BSP.

DR. WILSON: Dr. Lee, I believe the patient is on your service. Would you like to comment on this patient's problem be-

fore we have Dr. Parrish describe the operation that he carried out on this patient?

DR. WILLIAM LEE: This patient had an extensive battery of diagnostic examinations carried out including thorough examination of the upper alimentary canal by radiologic examinations and including liver function studies. All of these did not reveal anything of interest except for the presence of a space occupying mass in the right upper quadrant. Because of the long presence of the tumor with no apparent hepatic disfunction, our suspicion before operation was that this was a liver tumor probably benign in nature.

DR. WILSON: This seems reasonable since all of us are familiar with the fact that we have seen actually very huge tumors of the liver that produce no symptoms whatsoever except pressure on surrounding structures. Frequently it is really amazing how much of the liver can be replaced by neoplasm and still have no abnormality demonstrated in liver function tests. Dr. Parrish, would you describe the operative procedure which you carried out on this patient?

DR. ROBERT PARRISH: An exploratory laparotomy was performed through a right rectus upper abdominal incision. The right lobe of the liver from the level of the medial border of the gallbladder lateralward was completely replaced by a large thin-walled multicystic tumor. The largest cystic component measured 10 by 12 cm. in diameter and contained chocolate colored fluid. Some of the smaller cysts contained clear fluid. One of these cysts was removed and proved to be a cystadenoma by frozen section. The left lobe of the liver was hypertrophied but otherwise normal. The incision was converted to a right thoraco-abdominal incision by extension through the diaphragm and eighth intercostal space. Multiple mattress sutures were placed at the proposed line of resection, and approximately three-fourths of the right lobe of the liver was removed. The specimen weighed 710 Gm. after most of the fluid was removed and measured 36 by 20 by 13 cm. The patient required 4000 cc. of blood during the procedure.

DR. WILSON: Dr. Kim, will you demonstrate the specimen for us? We are always

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\* Ten days following the first procedure, the enterostomy was resected and an end-to-end anastomosis performed. The postoperative course was uneventful.

glad to have the representative of the Pathology Department with us. Dr. Kim.

DR. YOON KIM: The specimen consisted of a mass of hepatic tissue with numerous cysts in it weighing approximately 750 Gm. after most of the cystic contents were evacuated. The specimen measured 36 cm. in lateral direction, 20 cm. in anterioposterior direction and 13 cm. in craniocaudal direction. About nine-tenths of the specimen was occupied by the numerous cysts, mainly in the right lobe. Most of the cysts were intrahepatic and large ones were protruding. The largest cyst was found within the right side of the specimen and measured 12 cm. in diameter. Smaller cysts were very close to each other and divided by thin septa of fibrous tissue giving an appearance of honeycomb. They ranged in size from a few to several centimeters. Some cysts contained clear or brown turbid fluid and others contained tenacious mucinous material. The inner surfaces of the cysts were smooth, milky white in some and granular, dark brownish in others. Multiple brownish rusty, soft plaques were present over the inner surfaces of the large cysts. Microscopically, most of the cysts were lined by a single layer of cuboidal cells, although a few were lined by a single layer of tall columnar epithelium. Areas of old hemorrhage were present in the walls of cysts associated with cholesterol clefts and foreign body reaction. The walls were fibrotic and occasionally sheets of compressed hepatic tissue were found within them. So this is, I believe, a case of cystadenoma of the liver. This lesion is very rare; frequently occurs in elderly persons between 40 and 60 years of age and is more common in females. Some cases tend to be associated with cystic lesions of the kidneys and pancreas. The pathogenesis of cystadenoma of the liver is not well understood.

DR. WILSON: Dr. Sherman, will you comment on this case now?

DR. ROGER SHERMAN: This is a very interesting case—because cystadenoma of

the liver encountered surgically is an extremely rare condition. Most cystic tumors of the liver are simple retention cysts and are usually associated with similar cysts of the kidney. Dr. Parrish did not describe any cysts elsewhere. Did this patient ever have any clinical symptoms related to this cyst? One case in my experience presented with acute right upper quadrant pain and an expanding mass easily 15 cm. in diameter which on operation proved to be a simple retention cyst which had bled into itself.

DR. WILSON: Thank you, Dr. Sherman. Dr. Parrish, would you like to answer Dr. Sherman's question?

DR. PARRISH: This patient had a history compatible with an episode of jaundice approximately a year before admission to this hospital which cleared spontaneously without treatment. The only other symptoms that she had were an awareness of the presence of an enlarging mass, particularly during the past year and occasional sharp pains readily relieved by aspirin which were associated with the mass. This is a rarely encountered tumor of the liver as substantiated by reports in the literature, particularly that of Dockerty who only found 5 cases of true benign cystadenomas of the liver at the Mayo Clinic from 1907 to 1954 inclusive.

DR. WILSON: Dr. Tyson, did you have a question?

DR. WILLIAM T. TYSON: I would like to ask Dr. Parrish if he employed one or more drains in this case as I think most of us believe that the danger of bile peritonitis is always present in a situation such as this.

DR. PARRISH: This patient was drained very adequately with six large penrose drains being placed in the right upper quadrant, and they have proven to be very necessary in the postoperative period as shown by the profuse drainage on the dressings daily.

DR. WILSON: This completes the discussion for today.



## CLINICOPATHOLOGIC CONFERENCE

### Baptist Memorial Hospital

#### Gaucher's Disease\*

This 55 year old Jewish spinster had noted progressive dyspnea on exertion for about one year before she sought medical care in Feb., 1960. Following emotional excitement or activity, she had noticed diffuse aching in her neck with a mild tightness across the anterior chest. Occasionally she had a sensation of a heavy weight across her shoulders, though, there was no orthopnea or paroxysmal dyspnea. The chest pain did not radiate to either arm. She denied ankle edema.

Her family history was extremely interesting. She had 3 sisters, all of whom had enlarged liver and spleen, though no diagnostic studies were performed. In addition, her 3 brothers all had coronary artery disease between the ages of 40 and 60. There was no family history of diabetes. The patient's social life was perhaps significant in that she had always been a good cook and had enjoyed using dairy products liberally in practicing the culinary art.

On her initial examination she was a small, though somewhat obese white woman who appeared her stated age. Her height was 59½ inches and she weighed 131¼ lbs. Her pulse was 112, and B.P. 170/86 in both arms. The skin was negative, except for xanthelasma of the left orbit and a small subcutaneous tumor on the right calf. The hair appeared to be within normal limits. Funduscopic examination was negative; there were no angioid streaks. The thyroid was not palpable. Moist rales were heard in both lung bases. The heart was slightly enlarged beyond the midclavicular line at the 5th ICS; A-2 was greater than P-2, and there was a diffuse apical systolic murmur at the apex. The abdomen was most remarkable in that the liver was 8 cm. below the costal margin in the anterior axillary line, and the spleen was markedly enlarged, extending 15 cm. below the costal margin in the midclavicular line. No lymphadenopathy was apparent and the rest of the examination was within normal limits.

Laboratory data at time of examination: Chest films showed slight increase in transverse diameter of the heart with elongation and tortuosity of the aorta. EKG: On Feb. 23, the T-wave was diphasic in III, a slight Q-wave in I and II, and slight ST-depression in V<sub>2</sub>-V<sub>4</sub>. Subsequent tracings on Mar. 23, revealed T-wave inversion in V<sub>3</sub>-V<sub>6</sub> with ST-depression in I, II, and AVL. Hgb. was 12.5 Gm. with a WBC. count of 4,700, with 69% segs, 31% lymphs. Urinalysis showed a sp. gr. of 1.020, with pH of 4.5, and negative sugar, albumin, and microscopic findings. Two-hour postprandial sugar was 128 mg.; and the BUN. was 12.5 mg. per 100 ml. BSP. retention at this time was 12% in 45 min.; alkaline phosphatase was

4.5 Bodansky units; SGOT 30 units, and the acid phosphatase was recorded as 9 King-Armstrong units (normal 1:5).

Course. The patient was digitalized with digitoxin and placed on hydrochlorizide with reduction in weight by 11 lbs. over a 5 month period. There was an improvement in the pulse rate to 72 per min., the B.P. became 140/70, and the rales cleared from the lung bases. Unfortunately, there was no change in size of the liver and spleen which continued to be hard with very firm, sharp edges. Calcific deposits in the spleen were noted on the X-ray film.

After a weight loss of 7 lbs., the serum cholesterol was found to be 350 mg. per 100 ml. on two determinations several months apart. At this time she was started on triparanol (MER-29)—from July 21 to Sept. 21, 1960. After one month on this agent, the serum cholesterol fell to 249 mg., and at the time of its discontinuance, it was 240 mg. per 100 ml. Two months later it had risen to 278 mg., and at the time of her death it had returned to 339 mg. per 100 ml. During this period her weight had decreased 2 lbs. In November she noted purpura for which she was given Hesper C (hesperidin complex and ascorbic acid). The Hgb. was 11.8 Gm., hematacrit 37%, and WBC. count 6,400 with 40% lymphs, 53% segs, 5% monos, and 2% eosinophils.

She continued to have chest pains, and pentaerythritol tetranitrate (Peritrate) was added to her medication. Three nights before admission she had a severe episode of chest pain with sweating. When seen 3 days later, the BP was 90/70, pulse 115, and weight 118 lbs. She was admitted to Baptist Emergency Room at 11:10 a.m., and expired forthwith in acute pulmonary edema.

DR. CHARLES V. DOWLING: In discussing this problem an attempt will be made to analyze the case somewhat in the way the physician in charge would have had to approach it, step by step, as observations and laboratory data made themselves available in a chronologic way, and not simply to organize the facts retrospectively, then run the gamut of possible differential diagnoses.

The first two paragraphs very quickly bring into focus coronary insufficiency, familial disturbances of lipid metabolism, and Gaucher's disease. Interestingly, in regard to the last, an Israeli author recently has speculated at length not only about the high incidence of this disease in Jews but also about the intriguing possibility that the incidence is significantly different in Sephardic as opposed to Ashkenazi Jews. The little digression into the patient's pursuit of the culinary art may be pertinent. Possibly her serum lipid levels were effected by her passion for using dairy products.

\* Baptist Memorial Hospital, Memphis, Tenn.

To get to the initial physical examination, it was noted that there were moist rales at the lung bases, that the heart was slightly enlarged, and that A-2 was louder than P-2. Hepatosplenomegaly is mentioned. It is also stated that there was no lymphadenopathy, and that the rest of the examination was not remarkable. Chest X-rays indicated some increase in the transverse diameter of the heart. The aorta was elongated and tortuous. One assumes there was atherosclerotic disease of the aorta which would account for both wide pulse pressure, with a basically systolic elevation, and for the fact that the aortic second sound was louder than the pulmonic second sound, which, in view of the fact that this patient seemed by other criteria to have been in failure, might be a little unusual. One would ordinarily expect an accentuation of P-2 with left ventricular failure. Her hematologic situation seems not to have been remarkable at this time. Urinalysis was quite within normal limits. Her blood sugar two hours after eating was normal. The BUN. was within normal limits; the BSP. was slightly elevated; the alkaline phosphatase was within normal limits; the serum glutamic oxaloacetic transaminase was normal, and the acid phosphatase was slightly elevated. The patient was digitalized and was diuresis induced with thiazide drugs, and seems to have improved clinically. Her spleen and liver, however, did not change in size. We might allude for a moment to the electrocardiographic tracings. The initial electrocardiogram was essentially within normal limits; the Q-waves noted in leads I and AVL are not pathologic, and probably represent septal depolarization. The subsequent electrocardiograms show clear-cut ST-segment and T-wave abnormalities compatible with digitalis effect or with electrolyte imbalance—possibly hypokalemia. There is nothing in these EKGs. to indicate that there was myocardial ischemia and/or infarction.

We are given a little more historical data in the last paragraph and are introduced to the fact that this lady's serum cholesterol level was elevated to 350 mg. per 100 cc. blood—an abnormal value by any standards. Triparanol (MER-29) was administered in unstated amounts from July to September.

During this period there was a drop in the serum cholesterol level—quite a considerable one (about what one would expect, 30% or so)—and a return toward higher levels when the drug was discontinued. It is further recorded that she developed purpura, a complication that, it seems, must be considered in the light of her splenomegaly. She died despite all attempts at therapy, presumably from acute pulmonary edema. One reads that three nights prior to death she had a severe episode of chest pain with sweating, vascular collapse and finally acute pulmonary edema. Now, what was the matter with this lady?

The first thing that commands one's attention is the fact that there were several siblings who had similar clinical findings, at least partially—the enlarged liver and spleen. In considering this data alone, one certainly is influenced to think of such things as familial hyperlipemia and Gaucher's disease. In view of the apparently high familial incidence of hepatosplenomegaly one can probably eliminate acquired diseases of the liver which might result in hepatosplenomegaly—the various types of cirrhosis. One presumably can also reject some of the hereditary diseases which might result in splenomegaly with attendant blood dyscrasias, such as the hemoglobinopathies, because hepatomegaly of this order of magnitude is certainly generally not seen in these cases. There are familial diseases involving deranged liver function, such as Gilbert's disease and Dubin-Johnson disease, which, however, are not usually attended with hepatomegaly nor, I believe, with splenomegaly. So we come to a consideration, it seems to me of familial hyperlipemia and of Gaucher's disease with an associated lipid abnormality. The acid phosphatase level is occasionally slightly elevated in Gaucher's disease, and not, as far as I know, in familial hyperlipemia. My feeling is that familial hyperlipemia explains the picture best. The presence of Gaucher's disease would have been relatively easy to determine with biopsies of bone marrow or, possibly, of liver or spleen. Since the results of such studies are not recorded here, I assume that they are not available. The question of whether this could be Gaucher's disease with a concomitant lipid abnormal-



ity is only to be speculated about. Since no comments were made about bone abnormalities one is less inclined to accept the diagnosis of Gaucher's disease.

Some comments are in order about possible complications induced by the administration of triparanol, or "MER-29." As far as I know, liver function abnormalities are relatively infrequent, and hepatosplenomegaly from the use of this drug is not known to me. To my knowledge the only abnormalities that have been reported from the use of the drug have been slight temporary elevations in SGOT levels and slight temporary increases in the amount of cephalin-cholesterol flocculation. Other than this liver function studies have been within normal limits. Nor do I know of any hematologic abnormalities attributable to the use of this drug to explain the bleeding tendency that was documented late in the record, and which I feel is ascribable to the splenomegaly and so-called hypersplenism. We are not given a platelet count here. Whether the platelets were normal, I don't know. The effect of triparanol on adrenal glands has been noted for some time. It was first noted in preliminary work that there was depletion of adrenal fat associated with its use. Attempts to demonstrate abnormalities of adrenal responsiveness in patients given fairly large doses of this material—up to 2 grams a day—failed in at least one or two series to yield any information to support the idea of adrenal insufficiency. Recently, however, studies from the University of Arkansas Department of Medicine have indicated that doses of "MER-29" of a gram a day given over periods of about a month have been associated with diminished adrenal responsiveness. A return to normal adrenal status occurred within a month after discontinuing the drug. It should be pointed out that fairly sizeable doses of triparanol were used in these studies. No reports of such adrenal insufficiency in individuals receiving doses of 250 or 500 mg. of the drug per day have been published; so it would seem that this is probably a fairly safe dosage range. Triparanol, parenthetically, is not an unsaturated fat, nor a hormone, not a vitamin, not a plant sterol. It is a synthetic drug which seems to reduce cholesterol levels by

blocking the synthesis of cholesterol at the 24-dehydrocholesterol stage. In the studies of adrenal function done at Little Rock, it was noted that the amount of depression of adrenal function by triparanol was directly related to the pretreatment level of adrenal activity. They found, for example, that subjects producing large amounts of adrenal steroids—one patient with hyperaldosteronism and two with Cushing's disease—exhibited striking drops in hormone levels, with return to normal values following the withdrawal of the drug. So it would seem, not knowing how much triparanol this woman got but I suppose she got the usual amount of 500 mg. a day, or possibly 250), that this drug had nothing to do with either the worsening of her liver disease, the splenomegaly, or the induction of an hematologic abnormality. Another point about triparanol and other alleged cholesterol-lowering drugs is that, although their use may be attended with reduced cholesterol levels, whether they will inhibit the progression of the atherosclerotic disease in the blood vessel walls is still very unclear. I will then suggest that this lady was one of a family with familial hyperlipemia and hypercholesterolemia, that her hepatosplenomegaly was on this basis and not a part of the picture of Gaucher's disease and, I will probably be wrong, that she died from acute coronary occlusion with myocardial infarction.

DR. CHARLES NEELY: I wish to thank Dr. Dowling for a very excellent presentation. Would Dr. Booth review the X-rays for us?

DR. JAMES L. BOOTH: In the chest X-ray we see a diffuse infiltration in both lower lung fields, and there is an increase in transverse diameter of the heart with elongation and tortuosity of the aorta. (Fig. 1.) I do not think this is pulmonary edema or congestive failure, since pulmonary edema collects around the hilar areas. It is true that this infiltrate does not involve the upper lung fields, but pulmonary edema produces more conglomeration around the hilar areas, whereas in this case the infiltration is in both lower lung fields. If this patient had Gaucher's disease, there is a good possibility that she might have had some changes in the lower end of each



FIG. 1. Bilateral infiltration of lower lobes of lung due to Gaucher's disease.

femur which is said to characteristically present a mild flask appearance to the lower femur. On the other film we see the lateral cervical spine. This is being shown because the patient did have, as you remember, angina. The question is, was this pain due to coronary artery disease. This is a very dark film, but the cervical vertebra all show marked degenerative changes. All of the interspaces are narrowed, and it is possible that this lady was having some pain on the basis of the changes in her neck. There is calcification in the spleen, which may represent an old infarct; at least, there is calcification in the capsule of the spleen.

DR. CHARLES E. STRICKLAND: Dr. Dowling, that was a very interesting discussion.

The patient had severe atherosclerosis involving the right and left coronary arteries, with areas of as much as 90% stenosis of the vessels. She did not have areas of acute myocardial infarction or remote myocardial infarction, but there were multiple areas of subendocardial fibrosis and fibrosis of the papillary muscles. This patient had Gaucher's disease with massive involvement of the spleen, which weighed 1200 grams. The lungs were quite interesting as they were extremely heavy, weighing 1200 and 1100 grams, and on sections were diffusely infiltrated by typical Gaucher's cells, an unusual finding in the typical case of Gaucher's disease. The liver was approximately twice normal weight and showed extensive infiltration by Gaucher's cells. Also there

was to a lesser extent involvement of the lymph nodes, stomach, large and small bowel, including an adenomatous rectal polyp. The involvement here was primarily in the lymphoid areas where there were large numbers of reticuloendothelial cells. There was minimal involvement of the thyroid, ovary, and the skin. The skin lesion was unusual as it was a sclerosing hemangioma, but in this sclerosing hemangioma there were Gaucher's cells. Gaucher's disease, *per se*, does not produce discrete skin lesions, but when there is a skin lesion for some other reason, the Gaucher's cells can appear in the skin lesion. Gaucher's cells, incidentally, also appeared around the coronary vessels where there was inflammation around the atherosclerotic plaques. Since the diagnosis of Gaucher's disease is primarily a morphologic one, I would like to show some typical cells of Gaucher's disease. This splenic imprint shows a fairly large cell, about 60 micra in diameter, which has a round, eccentric nucleus and abundant cytoplasm that presents a wrinkled, tissue paper appearance. (Fig. 2.) One must dif-

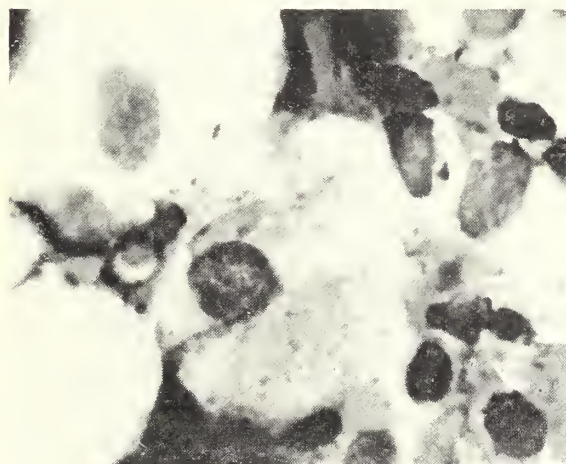


FIG. 2. Typical Gaucher's cell from spleen imprint.

ferentiate Gaucher's disease from Neimann-Pick's disease, in which the cells are smaller and there is vacuolization of the cytoplasm. This is a section of lung and, as Dr. Booth pointed out, there is a tremendous pulmonary infiltrate; in these infiltrates there are large numbers of typical Gaucher's cells. (Fig. 3.) By the use of the Schiff stain, these cells can be distinguished from the typical lipid-laden macrophages of chronic pneumonitis and lipid pneumonia. This Schiff's stain of the Gaucher's cells in the lung dem-



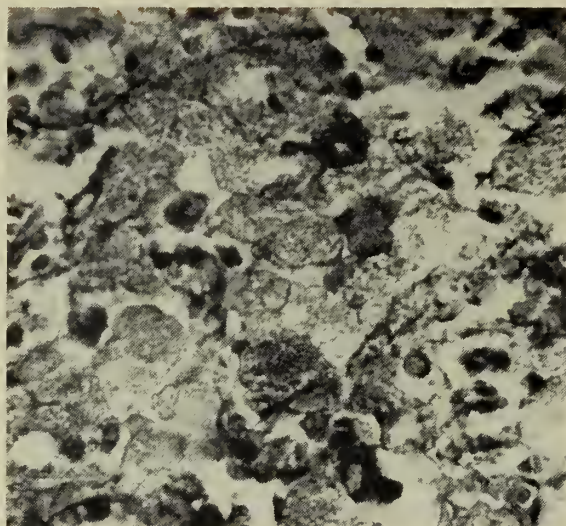


FIG. 3. Schiff's stain of Gaucher's cells in the lung.

onstrates the strong Schiff-positive character of the cells and the delicate reticular pattern of the cytoplasm.

I would like to discuss the probably biochemical alteration in Gaucher's disease.<sup>1</sup> The proliferating cells in this disease contain large amounts of an abnormal glucocerebroside. The cerebroside of Gaucher's disease is formed by the combination of an amino acid, sphingosine, and glucose forming glucosyl sphingosine which combine with lignoceric acid to form glucocerebroside. An enzyme, uradyldiphosphate-galactose-4-epimerase is necessary to convert the insoluble glucocerebroside to the soluble galactocerebroside, and this is the enzyme that is deficient in Gaucher's disease, allowing the accumulation of glucocerebroside within reticuloendothelial cells.

Apparently this process takes place within the cells because the blood level of the cerebroside is not elevated in these patients. Dr. Dowling commented on the occurrence of the disorder in several members of the family, and I would like to comment briefly on the genetics. This case shows the typical "horizontal" genetic pattern in which several members of the same generation will have the disorder. Herndon and Blender have had the opportunity to observe negro families with Gaucher's disease in which there were enough children for statistical evaluation. It had turned out that 25% of them had this disorder, which fits into the pattern of an autosomal recessive. The disorder may be transmitted as an autosomal

dominant with variable penetrance. This is demonstrated by asymptomatic parents who have children with the disorder. Bone marrow examinations of the parents, although they are asymptomatic, reveal small Gaucher's cells, which mean they are affected and have transmitted the disorder to the children as an autosomal dominant.

Patients with Gaucher's disease have an elevation of the serum acid phosphatase. When disodium phenylphosphate is used as the substrate, however, the cells contain a large amount of alkaline phosphatase.

The adrenals weighed 50 grams, approximately four times the expected weight for this patient. Microscopic sections of the adrenals revealed diffuse hyperplasia of the adrenal cortical cells. Histochemical stains were performed on the adrenal tissue in an attempt to elucidate the mechanism of this hyperplasia. The cortical cells did not take a Schiff stain, ruling out Gaucher's involvement of the adrenal and other disorders associated with the intercytoplasmic deposition of mucopolysaccharide. The adrenal cortex normally contains an abundance of cholesterol; however, a Liebermann-Buchard stain on the adrenal tissue demonstrated an absence of stainable cholesterol. I would like to explain the changes within the adrenal cortex as being a result of the "MER-29" administration. Toxicity studies on animals have shown that triparanol can produce cortical hyperplasia in rats and monkeys.<sup>2</sup> This adrenal hyperplasia has been associated with a reduction in cholesterol content of the adrenals, and the reduction in cholesterol in the adrenal tissue has been more striking than the reduction in serum cholesterol. Admittedly, the animal studies have been carried out with doses of the drug considerably higher than the usual therapeutic doses. However, I would like to speculate that this patient with one metabolic defect may have been more sensitive to the action of triparanol than a normal individual would have been.

DR. NEELY: Dr. Runyon, would you comment on the metabolic lesions produced by triparanol with particular reference to the adrenal?

DR. JOHN W. RUNYON: The inhibition of cholesterol production by triparanol is at the level of conversion of desmosterol to

cholesterol. Ordinarily, the adrenal contains an excessive amount of cholesterol, in fact a greater concentration than any other tissue in the body. Cholesterol is the precursor for the steroids produced by the adrenals. However, under ACTH stimulation cholesterol may be depleted from the adrenal because of the conversion of cholesterol to steroids.<sup>3</sup> Possibly severe stress terminally with increased ACTH production could be a factor in the apparent adrenal cholesterol depletion. It is interesting to speculate upon the possible role of triparanol played in the adrenal findings in this patient. In rats given the equivalent of 3.5 grams of triparanol daily for an extended period, there was a slight increase in the adrenal weights.<sup>4</sup> In humans given *ordinary dosages*, triparanol caused no alterations of adrenal function tests.<sup>5</sup> However, Melby<sup>6</sup> in Little Rock first noted a decreased adrenal output of steroids in normals, certain patients with Cushing's syndrome and adrenal carcinoma upon giving 1 to 2 grams of triparanol. This amount is 4 to 8 times the usual dose used in treating hypercholesterolemia. Apparently this patient had the usual dose of the drug for only two months and this was discontinued a month or more before entering the hospital. I think we will have to await further experience to know for certain whether some unusual adrenal response, possibly related to the Gaucher's disease, can occur with the usual therapeutic dosages of triparanol.

DR. NEELY: Dr. Upshaw, is there a relationship between hypercholesterolemia and Gaucher's disease?

DR. JEFFERSON DAVIS UPSHAW: Hypercholesterolemia is not a feature of Gaucher's disease, and in this case, probably represents two separate entities.

DR. CHARLES V. DOWLING: Did this woman have bilateral involvement of the ovaries, and if so, I would like to speculate romantically that she may have oophorectomized herself with the subsequent development of hyperlipemia and hypercholesterolemia. It is well known that women who have had an oophorectomy early in life, have a higher incidence of arteriosclerotic disease. I also wonder if this may have increased pituitary activity which could have resulted in hyperplasia of the adrenals.

DR. CHARLES E. STRICKLAND: This is an attractive hypothesis, Dr. Dowling; however, the involvement of the ovaries by the Gaucher's cells was relatively minimal.

DR. DOWLING: What was the extent of the bone involvement?

DR. STRICKLAND: The bone marrow was relatively cellular, and, scattered through the hemopoietic cells were isolated nests of Gaucher's cells.

#### References

1. Stein, M., and Gardner, L. I.: Acute Infantile Gaucher's Disease, *Pediatrics* 27:489, 1961.
2. Blohm, T. R., Kariya, T., and Laughlin, M. W.: Effects of MER-29 Cholesterol Synthesis Inhibitor on Mammalian Tissue Lipids, *Arch. Biochem.*, 85:250, 1959.
3. International Academy of Pathology Monograph. The Adrenal Cortex, 106-189, Henry D. Moon, Ed. New York. Paul B. Hoeber, Inc., 1961.
4. Blohm, T. R. and MacKenzie, R. D.: Specific Inhibition of Cholesterol Biosynthesis by Synthetic Compound (MER-29), *Arch. Biochem.* 85:245, 1959.
5. Ford, R. V.: The Effect of MER-29, a Cholesterol Synthesis Inhibitor on Adrenal Function, Blood Clotting Mechanisms and Serum Lipids Before and After Stimulated Stress in Man, *Prog. Cardiovascular Dis.* 2:548, 1960.
6. Melby, J. C., St. Cyr, M., and Dale, S. L.: Reduction of Adrenal Hormone Production in healthy adults and patients with hyperadrenalism by an inhibitor of Cholesterol Biosynthesis, *New England J. Med.* 264:583, 1961.



# President's Page



WILLIAM O. VAUGHAN,  
M.D.

At the interim meeting of the AMA in Denver, it was made very clear that the attack on medicine is being put into high gear by the administration. This was confirmed when the second session of the 87th Congress convened on January 8th. President Kennedy has made the health care of the aged under the Social Security mechanism his principal goal in the domestic program of the administration.

As our Association enters a new year, we are confronted with major problems and without doubt, the most important one is that of health care for the aged and the possibility of such care being included in the Social Security System.

We have read with interest the announcement by the American Medical Association and National Blue Shield concerning a plan being developed for health care of aged persons under a low-cost insurance program. Such a program would parallel closely the principal in our own Tennessee Plan. It would provide health coverage for persons 65 years of age and above at a low premium. For those who are able to pay, the physician would not be bound to totally accept the low fee for service. This seems a sensible approach.

The hearings conducted last summer tend to be packed in favor of the King-Anderson Legislation (H.R. 4222) especially for public consumption.

The news releases and comments of key congressmen and the President presents a serious problem. They must be counteracted by the medical profession if we wish to preserve our heritage of free enterprise and free choice, and protect our future generation from the yoke of socialism and its many tragic pitfalls.

If medicine is to survive as a free profession, we, as doctors, must individually and collectively become more responsible for the outcome of this attack on the American system of medical care by legislative action.

One way to meet this legislative action is through a new mechanism now getting underway. At the interim meeting of the AMA, added emphasis was given to AMPAC (American Medical Political Action Committee). AMPAC is an organization which will perform a worthwhile service in aiding to combat indignities being thrust at the medical profession and will help in improving the public posture of physicians everywhere.

Time is short—may we not waste our efforts.

The AMPAC organization, strongly backed by the House of Delegates of the American Medical Association, has urged that each state establish an AMPAC organization. This has to be done separately and apart from the State Medical Association.

The Board of Trustees of TSMA went on record at its meeting on January 14th to approve the purposes of AMPAC. They will recommend these to the House of Delegates in April. The aims and purposes of AMPAC are: (1) to promote and strive for the improvement of government by encouraging and stimulating physicians to take a more active part in governmental affairs; (2) encourage physicians and others to understand the nature and actions of their government as to important political issues and political parties; (3) assist physicians and others in organizing themselves for more effective political action and for carrying out their civic responsibilities; (4) to do any and all things necessary or desirable for the attainment of the purposes stated above.

The help of each physician in the State will be most urgently needed in 1962. Many challenges will confront us and we must be ready to meet them.

President

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FEBRUARY, 1962

## EDITORIAL

### RADICAL MASTECTOMY—

There are few who are content with the present methods of dealing with malignant disease of the female breast. In spite of the improvement in methods of dealing surgically with many and various malignant disorders, the radical mastectomy, as proposed by Halstead about 70 years ago, continues as the best method for getting rid of this type of cancer. Naturally improvement in methods of anesthesia and the more recent availability of antibiotics and whole blood for transfusion, together with improved technics in wound care have lessened the morbidity and mortality formerly associated with this major surgical procedure.

Now the question that has been raised is whether or not the radical mastectomy as a procedure is justified or even necessary. The argument against this procedure is that the 5 year survival rate is about 40% and by the time 10 years have passed following

mastectomy only approximately 25% of the original group are still alive. These figures are compared by the English group, headed by McWhirter<sup>1</sup> with their reported survival rates in patients treated by simple mastectomy and postoperative radiation.

In a recent issue of a periodical designed primarily for the medical student and the recent medical graduates, Garland<sup>2</sup> a Clinical Professor of Radiology at the University of California Medical School, in San Francisco, encourages an iconoclastic doctrine. He emphasizes that breast cancer is often a systemic disease, when first discovered, and that radical surgery cannot, therefore, be expected to cure. He does permit the surgical procedure in patients who are poor radiation risks. If, however, radiation is feasible, he recommends this method combined with simple mastectomy and, at times, with hormone therapy. This method, he contends, avoids morbidity, mortality, chest wall deformity, burdensome edema of the arm and limitation in arm function.

The simple mastectomy removes the tumor and the breast. If the tumor is radio-resistant this operation is important. If the tumor is radio-sensitive then the possible local metastases can be obliterated by deep X-ray therapy. If metastases are present in the axilla, surgery cannot be expected to obliterate completely all the involved nodes. Actually the dissection of the axilla may further spread the disease process. Indeed after a radical dissection the axilla is left in a state of poor vascularization that is unsuited for full radio-therapy. In the group of 72 patients treated by Garland, by simple mastectomy and radical radio-therapy, the five year survival rate was 51 per cent.

Reference is given to a report from Australia.<sup>3</sup> In this series of 453 patients treated by simple mastectomy and radical radio-therapy, the five year survival rate was 53 per cent. Among 817 patients treated by this group by radical mastectomy and radio-therapy, the five year survival rate was only 47 per cent.

Garland admits that this plan of treatment fails to control radioresistant and "potentially removable axillary metastases." This situation occurs in an estimated 5% of women with breast cancer. He also does not accept poor radiation risks, women who



have either very thick-muscled chest walls or very obese women.

In the Nashville area an excellent review of 1137 patients was published by Byrd, Burch, Stephenson and Nelson.<sup>4</sup> This group's attitude favors radical mastectomy with postoperative radiation reserved only for those with demonstrated axillary metastases. The five year survival rate was 79% in those patients so treated who did not have axillary metastases and 40% for those who had involvement of axillary nodes. Only those with axillary metastases were given deep X-ray treatment postoperatively.

Another publication by Byrd and Stephenson<sup>5</sup> reports the use of simple mastectomy performed in 139 patients who either had an ulcerated breast lesion with or without regional nodes and/or distant pulmonary or boney metastases. In this group 24% survived more than 5 years. Although patients with metastases usually received postoperative radiotherapy, there were 35 who did not. This latter group survived for a longer period of time than did the group receiving postoperative radiation.

In 1927, Doland<sup>6</sup> followed a group of women in a chronic disease hospital for terminal care in Boston. In 23 patients with operable breast cancer who refused operation, the average duration of life following the discovery of the malignant lesion was 43 months. In a group who were deemed inoperable when first seen, the average duration of life was 29 months. The five year survival rate of 22% in the group not receiving any treatment must be compared to the 51% five year survival rate for those receiving simple mastectomy and postoperative radiation and the 79% five year survival in those patients treated by radical mastectomy and indicated radiotherapy. This wide variation seems to clearly encourage the employment of radical mastectomy.

Naturally opinions and statistics may be subject to many variables. One might question the desirability of recommending the nonoperative treatment of breast cancer to students and recent medical graduates. By the same reasoning it also seems unwise to recommend ultraradical breast surgery to this particular age-group of physicians.

It does seem that more emphasis needs

to be placed on the early detection programs in the attempted control of breast cancer.

There still seems good logic to the dictum of the late Barney Brooks who urged, the earlier the diagnosis the more radical should be the surgical treatment.

Early diagnosis and radical mastectomy combined with postoperative radiation, castration, and androgen therapy, all must combine to combat this terrible problem, until a more perfect treatment can be evolved.

A.W.

### References

1. McWhirter, R.: Simple Mastectomy and Radiotherapy in Breast Cancer, *Brit. J. Radiol.* 28:128, 1955.
2. Garland, L. H.: Changing Concepts in the Management of Cancer of the Breast, *New Physician* 10:433, 1961.
3. Queensland Radium Institute. Annual Report —1960.
4. Byrd, B. F., Burch, J. C., Stephenson, S. E., and Nelson, I. A.: Effect on Survival of Certain Variables in Breast Cancer, *Ann. Surg.* 149:807, 1959.
5. Byrd, B. F. and Stephenson, S. E.: Simple Mastectomy for Cancer of the Breast, *Ann. Surg.* 145:807, 1957.
6. Doland, E. M.: Untreated Cancer of the Breast, *Surg., Gynec. & Obst.* 44:264, 1927.



### IMPLEMENTATION OF THE POST-MORTEM EXAMINATION ACT OF 1961

This Act empowered the Commissioner of the Department of Public Health to appoint a Chief Medical Examiner, outlined his duties and the circumstances under which postmortem examinations are to be done.

Incidentally, with AMPAC at hand and the attendant criticisms of the "selfish" political interests of the medical profession, it might be well in passing to remind ourselves that the Post-Mortem Examination Act was passed only after the medical profession mobilized itself for political action on this item. The story was told on this page a year ago.<sup>1</sup> How such opposition to the bill developed in the legislature that the tactic of adding unacceptable amendments

<sup>1</sup> Editorial: Doctors' Strength Mobilized for Passage of Medical Examiner Bill. *J. Tennessee M.A.* 54:133, 1961.

had, for all intents and purposes, killed it as it was sent back to committee. The Legislative Committee of the Tennessee State Medical Association sprang into action. Eight days later the bill came out of committee, stripped of the more objectionable amendments, and was passed. This, like the Act for the Hospitalization of Indigents and the implementation of the Kerr-Mills bill (the latter two forbidding the charging of fees to hospitalized patients) defines so clearly that the profession has interests other than in lining its pockets.

Henry I (1100-31) was the first to appoint a coroner, as royalty's check on the sheriff, who was the chief executive officer of the shire in medieval England, and who was charged with enforcement of the laws and keeping the peace.<sup>2</sup> The coroner had as one duty ascertaining certain facts about dead persons because of monetary forfeits of certain of the deceased to crown or church. Apparently the barons and townspeople found fault with the sheriff and coroner on their part in the maintenance of the prerogatives of the crown, since the Magna Carta (1215) clearly limited their powers. Yet the coroner system stands to this day, seven centuries later, and the coroner remains an officer under the state constitution.

The profession and people of Shelby County, disturbed by the fact that no inquest had been held since 1938, had passed by the legislature (1951) a private act permitting a salaried physician to become coroner and to permit the Department of Pathology of the U.T. College of Medicine to do the required autopsies. Shortly thereafter the Nashville Academy of Medicine made suggestions and moves to do the same, but these turned out to be fruitless.

As was described above a legislative act for the whole state was put on the statute books a year ago. In the section on *Medical News in Tennessee* of this issue appears a memorandum from the Office of the State's Department of Public Health so our profession may know what progress has been made. Thus, most of the counties have appointed doctor-examiners. The Chief Medical Examiner is currently engaged in an intensive campaign of education by per-

sonal visits with law-enforcement officers, county medical examiners, county courts and undertakers. An experienced toxicologist has taken over the completely equipped laboratory in the Department of Public Health. To Dr. Hutcheson goes the State's thanks that the Department is "open for business" at such an early date, recognizing that its organization needed to be built from "scratch."

Now will need to be developed the responsibilities of the medical profession of the several counties in the implementation of the Act through their confrere who accepted the post of county medical examiner. He must be a sincere, conscientious doctor, devoted to an unbiased study of facts presented to him, and as citizen will need to protect or to accuse his fellow citizens, as the case may be. (Within the first six months, the Chief Medical Examiner, by autopsy studies, has provided the evidence which has exonerated one man suspected of murder, and led two others to admit crime.)

The Act<sup>3</sup> provides that the County Medical Examiner is to be elected by the county court. By law he is "authorized and empowered to employ a pathologist. . . ." District attorneys-general are authorized to order an autopsy.

" . . . when recommended by the county coroner and the county medical examiner on the body of any person whose death occurs under the circumstances as outlined by this chapter. . . ." "Any physician, undertaker, law enforcement officer, or other person having knowledge of the death of any person from sudden violence or by casualty or by suicide, or suddenly when in apparent health, or when found dead, or in prison, or in any suspicious, unusual, or unnatural manner, or where the body is to be cremated shall immediately notify the county coroner and the county medical examiner or the district attorney-general, the local police, or the county sheriff, who in turn shall notify the county medical examiner.

"Whenever a death occurs under the circumstances as set forth in this chapter, the body shall not be removed from its position or location without authorization by the county coroner and the county medical examiner. . . ."

"When a death is reported as provided it shall be the duty of the county medical examiner to immediately make an investigation of the circumstances of the death and record his findings in

<sup>2</sup> Editorial: The Coroner System is Outmoded, J. Tennessee M.A. 49:25, 1956.

<sup>3</sup> Tenn. Code Annotated. Post-Mortem Examination Chapter 7. Sections 38:701-38:714. (Copies available from Office of the Chief Medical Examiner, Cordell Hull Bldg., Nashville.)



quadruplicate on a form provided by the division of post-mortem examination for this purpose, . . ."

"The records of the division of post-mortem examination, the county medical examiner, or transcripts thereof certified to by the chief medical examiner, shall be received as competent evidence in any court of this state of the facts and matters therein contained."

Thus this editorial comment is to remind ourselves of the efforts of the Legislative Committee of the T.S.M.A. and the designated committee from the Tennessee Society of Pathologists in collaboration with the Tennessee Department of Public Health in drawing up the Act. To remind ourselves too, that the political action of the doctors of this state, and only as individual doctors, brought it out of committee in an acceptable form, and performed the miracle of having it passed by a previously hostile Legislature—a purely personal educational effort. *Let us not forget this strength!*

Lastly, now that the State of Tennessee has a good thing, the profession must implement it. All the goodwill of the courts, and the efforts of law enforcement officers are of no avail without the contribution of the County Medical Examiner—a doctor. The *right* man must be selected and the local profession must back him in his work.

R.H.K.

## Special Article

### Are We Fighting a Battle We Can Win?\*

Jack Ballentine, *Executive Director,*  
Tennessee State Medical Association

It is a real privilege to participate in the program of the Middle Tennessee Medical Association and to share with you some observations concerning a matter that should be of concern to all physicians.

"Are we fighting a battle we can win?"

All of us here are products of our age. Ours is an age conceived in the dying decades of the industrial revolution; an age born in the tumultuous decades of scientific striving; and an age left to mature in the decades of a time whose character has not yet been determined. Only as men of conviction fight can a victory ever be won. When men of conviction cease to fight, true

freedom will perish from human society—perish a victim of the virus of apathy.

The battlegrounds of our times have been as various as the men who waged the wars. The industrial life of England and America were, and still are, the battlegrounds for the economic warfare wherein the contestants skirmish for men's minds. The one seeks to preserve human enterprise and individual ingenuity; the other seeks to submerge self-hood into the collective pot of conformity. The laboratories of science have ceased to be solely the battleground where men fight human suffering and disease. They have, in our own times, become pawns of power for those who would submerge individual striving in the maze of legislative control.

Perhaps the lines of battle are more closely drawn in the halls of education than anywhere else in our society. Our century has seen the educational processes of our land become the spawning ground for the fuzzy thinking of idealistic idiots who can find security only by submerging the ceaseless striving of individual intelligence in the swamp of socialistic scheming. All too often, socialistic planners wearing the hat of academic achievement hand down magnificent manifestoes for human living which are not only removed from reality, but are truly insensitive to the basic concept of life. We fight for the freedom to choose. To be free, a man must be free to choose. But he *must* be free to choose. Any system, any scheme, any plan which violates this dogma of dignity carries within it the seed of its own destruction.

The battles that we witness are but symptoms of a cultural cancer creeping ceaselessly over all men who live lives in this age of tumult. Yes, medicine is engaged in a battle. Yes, we are fighting. The character of victory is found in the quality of sacrifice. The quality of sacrifice is found in the quantity of self-investment. The warfare of our times is total. To the victor goes the mind not only of those thus engaged, but also the minds and bodies of generations which have yet to see the dawn of day.

You must realize that because you are on the battlefield does not mean that you started the war. The medical profession has always been the prime target for pseudo-

\* Read at the meeting of the Middle Tennessee Medical Association, Murfreesboro, Nov. 16, 1961.

social planners, but rather because your training and professional insight represent the greatest threat to these idiot ideologists. Perhaps you do not realize it, but unless the medical profession can be made the servant of socialism, the adversaries of individuality have lost the war before it really gets going. I am sure that most of you have thought what has made modern medicine in America great. The answer is your blessing and your curse. Modern medicine has molded the most fiercely independent profession in the world. Modern medicine rests upon the foundation of individual integrity, individual enterprise, individual initiative, and quite often independent actions. The history of medical science is a list of individual biographies of heroes whose contributions to the well-being of man have freed us from the dread of disease.

Now is not the time for fierce independence. The battle which rages around medicine is not your county society or state medical association nor the AMA's battle. It is the battle of all mankind. It is not the physician fighting to maintain his independence. It isn't even the American physician fighting to preserve his patients' right to choose. The magnitude of the struggle is far more than this. Literally, you are engaged in a common battle against a common enemy. If the world is to view this as "the doctors' fight," then you will succumb to the oldest military strategy in the world—divide and conquer.

Can we win? If victory is our goal, let history be our tutor. The pages of history are filled with the record of battles won and battles lost. In the lessons lie the answers we seek. Briefly, every man who has waged war against an enemy—be that enemy a legion of men, a virus of destruction, or a philosophy of evil—has triumphed by wisely using four words—situation, problem, strategy and tactic.

The present situation is well-known. The cult of collectivism seeks through legislative action to socialize American Medicine. The evils which Europe now seeks to shed are seeking new spawning grounds in America. This same situation finds expression in American Industry and Labor, in American Education and Professions, even in American Religion and Social Life. The cult of

conformity seeks to melt us down in the cauldron of collectivism.

To handle a single situation is not eradicating the underlying cause which gave birth to our present situation. A physician does not seek to relieve only a single symptom. He seeks to eradicate the causative agent. Then, and only then, can the patient be returned to full health. It is never enough to stop treatment with a diagnosis. Therapeutic agents must be prescribed.

The underlying problem can be briefly stated—pseudo-social planners in our day are attempting to erect a socialistic superstructure on a democratic base. To fully understand the depth and magnitude of this problem, you must leave the atmosphere of your profession and through exposure to the voices of other disciplines and professions, see how widespread the problem is. I believe that I know as well as anyone how busy physicians are these days. I know that you hardly have time to read your journals, brochures, manuals, and yes, even your mail, all of which are part of your tools. Communications is the biggest single problem internally faced by the Tennessee State Medical Association. However, I must say that only as you raise your sight from the limited horizon of your profession and view the problem in its complexity can you ever wage a full scale war against your enemy. You are living and dealing with "an age of anxiety." The voices of our time are crying out to be heard by all men with a common concern.

To analyze the current situation and to diagnose the underlying problem leads inevitably to the third stage of battle—strategy. Once you leave professional isolation, you become aware of allies in battle also. A true strategist wants not only to know the strength of his enemy, he wants also to know the strength of his allies. From his allies, he receives more than moral support. He receives manpower, supplies, aid and advice. Who in battle does not need allies? Who are your allies? We have heard from the adversaries. What have you heard from your allies?

One cannot hear from those one does not know. The American physician, and more particularly medical societies, must reach out with as much vigor and determination



for the help of its allies as it does to determine its detractors. The ancillary professions are filled with those not only willing but ready to join the fray, but hesitate to do so until they are sought. They can be part of your "intelligence corps." They can provide depth to your reserves. Yes, they can even provide manpower in the day of battle.

Strategy must include allied aid. Your strategy must include means whereby the ranks of medicine itself can present a united front. All need not agree in philosophy. But all must agree in purpose. Currently, medicine is divided not only into specialties, but particularly in its approach. There are those in government medicine; those in academic medicine; those in research; those in hospitals, as well as those in other and various fields of medicine.

Finally, the tactics of victory are found in an assault on reality. We are in a real battle against real forces. A tactical invasion must be made upon the thinking of *all* citizens. The minds of men have been swayed from the pathway of human enterprise. You must first lead those whom you seek to serve. True leadership seeks to serve. The false leader feathers his nest with the dollars he seeks to deny those who by the dint of hard work would earn in honesty.

Is it wrong to seek to have every man put his hands to the work of his own choosing, rather than to have his hands stretched out to receive the beneficent crumbs from a super-government—crumbs from which he has paid two-fold through taxes hidden and undefined.

Is it wrong to expect the physician, the teacher, to return to his role of guide and friend? When the mantle of leadership worn with dignity in generations past is allowed to fall from your shoulders, there are forces all too willing to assume it and abuse it. Look at England today. Is there any virtue in being a physician in a state-controlled medical system? The answer is written in the empty chairs in their medical schools.

The field of battle is not in the halls of legislature, not in the halls of academic chambers, nor in committees or caucuses. Your field of battle is in the homes where your patients live, in the schools where their

children learn, in the offices and factories and farms where they work, and in the churches where your patients attend. You cannot make a tactical assault on the forces against you unless you are in the field where these forces are at work. As the physician heals on the bed where the sick lie, let medicine lead in the streets and farms where the people live.

Are we fighting a battle we can win? Yes, we can win—win with men of strong purpose and determination. We can win if you will shed your apathy.

Let full analysis of the current situation be your examination of symptoms. Let full understanding of the underlying problem be your diagnosis. Let adequate planning and forceful alliances be the prescription, and let a tactical assault on reality be your therapy of triumph.

## DEATHS

**Dr. Charles Douglas Walton**, 69, Mt. Pleasant, died December 21st as the result of a heart attack at his home.

**Dr. C. E. James**, 68, Memphis, died January 11th at his home following a heart attack.

**Dr. Max H. Cohen**, 51, Memphis, died January 13th at Baptist Hospital.

**Dr. Elmo W. Mitchell**, 77, Crossville, died December 29th at his home.

**Dr. Willis S. Alexander**, 86, Ridgely, died December 17 at the Baptist Hospital in Memphis.

## PROGRAMS AND NEWS OF MEDICAL SOCIETIES

### Knoxville Academy of Medicine

The Society's regular monthly meeting was scheduled for the auditorium of the Knoxville Academy of Medicine on January 9th. The annual public service program was to be presented and Mr. Lee Anderson, Editor of The Chattanooga News-Free Press was to be the speaker. Due to the inclement weather conditions prevailing, Mr. Anderson's presentation was postponed and rescheduled later. His subject will be "The Influences Threatening American Constitutional Liberties and the Need for Cooperation Between Medicine and the Press."

### **Greene County Medical Society**

The Society met for its regular monthly meeting on January 2nd with Dr. Ben J. Keebler, President, presiding. The meeting was held at the Elks Club. Dr. Keebler discussed and compared advances in medicine under a free system as opposed to socialized medicine. In his discussion, he compared the United States with other countries. He also pointed out the aims of the medical society and what it means to doctors and what doctors mean to the nation.

New officers, in addition to Dr. Keebler, include Dr. Dale Brown as vice president and Dr. Kenneth Susong as secretary-treasurer.

### **Memphis-Shelby County Medical Society**

The Society met for its regular monthly meeting on November 7th in the Institute of Pathology. The scientific program was presented by Dr. James W. Raleigh, medical director of the American Thoracic Society. His subject was "The Increasing Problem of Primary Drug Resistance in Tuberculosis."

### **Chattanooga-Hamilton County Medical Society**

The Society met on January 9th at the Chattanooga Golf Country Club. The event was the annual banquet and installation of officers.

Dr. Edward G. Johnson, was installed as President of the Society and Dr. John B. Steele was named President Emeritus. Dr. M. F. Langston was installed as president-elect.

The January 25th meeting was an annual heart symposium arranged by the Chattanooga Area Heart Association. Speakers were as follows: Dr. William Likoff, Dr. Sam Proger and Dr. Sterling Edwards. Grand rounds were made at the Baroness Erlanger Hospital. The banquet speaker was Dr. Likoff, Chief of Cardiovascular Section, Hahnemann Medical College and Hospital, Philadelphia, Pa.

### **Nashville Academy of Medicine and Davidson County Medical Society**

The annual banquet and installation of officers was conducted on January 10th at the Hermitage Hotel. A dinner preceded the

meeting at 6:30 p.m. Dr. Joseph M. Ivie was installed as president and Dr. Walter Diveley, president-elect. Dr. Tom Nesbitt was installed as secretary-treasurer, and Dr. James Callaway and Dr. Douglas Riddell as new members of the Board of Directors.

Awarded 50-year service pins by Dr. W. O. Vaughan, President, Tennessee State Medical Association, in recognition of fifty years in the practice of medicine were Drs. Leonard Edwards, D. L. Mumpower, H. S. Shoulders and Harlan Tucker.

A memorial observance for Drs. Wesley Wilkerson, Herbert Francis, T. V. Woodring, Roger Burrus, William M. Hardy and Hugh M. Morgan was conducted by Dr. Henry Douglas.

### **Hamblen County Medical Society**

The Society held its regular monthly meeting on January 2nd at the Hamblen County health center with Dr. E. P. Muncey, Jefferson City, the new president, in the chair. Dr. Muncey appointed working committees for the year. The speaker for the session was Dr. David Hawkins of the Orthopaedic Clinic in Knoxville.

The December meeting was a special Holiday Dinner at the Country Club for members and their wives.

### **Consolidated Medical Assembly of West Tennessee**

The Society held its monthly meeting at the New Southern Hotel on January 9th. "The Cuban Problem" was the subject of Dr. Arturo Aballi's address. Dr. Aballi is assistant professor of pediatrics, University of Tennessee College of Medicine, Memphis.

### **Coffee County Medical Society**

The Society held its monthly meeting on January 9th when officers for 1962 were elected.

### **Henry County Medical Society**

The Henry County Medical Society in its meeting in December conducted the election of officers. Dr. W. G. Rhea was elected president; Dr. Kenneth Ross was named vice president and Dr. R. G. Fish, secretary. Dr. John Neumann, retiring president, was elected delegate to the Tennessee State Medical Association with Dr. Rhea serving as alternate delegate.



## NATIONAL NEWS

### The Month in Washington

(From the Washington Office, AMA)

Reports by the American Medical Association and the Health, Education and Welfare Department showed that 38 states have taken advantage of the Kerr-Mills law providing medical care for the aged with a total expenditure of \$121 million in the first 15 months of the program.

Citing the program's wide acceptance, Dr. Leonard W. Larson, president of the AMA, said that 27 states had enacted Kerr-Mills Medical Assistance to the Aged (MAA) programs and 11 other states had expanded Old Age Assistance (OAA) medical benefits under the new law.

In addition, he said, nine states already had OAA medical programs on the books and in most instances they are considered to be adequate to provide the necessary health care for those over 65.

Two of the three remaining states—Arizona, and Delaware—have excellent assistance programs at the local level which include medical care, Dr. Larson said.

"These figures certainly contradict statements by Kerr-Mills critics who say that the program can't and won't work," Dr. Larson said.

"In just 15 short months Kerr-Mills has been widely accepted across the land and with each passing day is proving that it can, and if given the fullest opportunity, will do the job.

"Kerr-Mills is being implemented by the states as fast, if not faster, than any previous federal-state matching program.

"Such rapid acceptance of this principle makes any compulsory health program through the social security mechanism totally unnecessary."

A variety of new approaches to better care for the chronically ill and aged will be made possible through the Community Services and Facilities Act of 1961, HEW said. The Act authorizes grants to community agencies to develop new and improved home nursing, home care, and other out-of-hospital services. The Act also raises the ceiling for grants to the states for the

construction of nursing homes from \$10 million to \$20 million annually.

Under the Hill-Burton program, 535 hospitals, nursing homes, rehabilitation centers, and other facilities were awarded \$146,330,000 in Federal funds toward \$468,661,000 of construction in 1961.

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Manufacturers accepted a congressional proposal for further government controls over the efficacy of prescription drugs, but stood pat in opposing patent provisions of the controversial drug legislation sponsored by Sen. Estes Kefauver (D., Tenn.).

Eugene N. Beesley, chairman of the board of the Pharmaceutical Manufacturers Association, said that the PMA "fully endorses the principle that a drug should be effective for the uses that a manufacturer claims for it; and, second, that the Food and Drug Administration, in passing on new drug applications to determine the safety of the new product, already evaluates—in many cases,—the evidence of its effectiveness for the uses claimed."

"Since FDA has expressed a desire to have its authority clarified with respect to its consideration of the effectiveness as well as the safety of new drugs, we wish to support the proposal as we understand it," he added.

Beesley said such FDA clearance "would assure physicians that a drug effectively produces certain physiological actions; but the physician, not the FDA, would determine whether these specific physiological effects would be useful or beneficial with respect to particular patients."

Beesley said the patent restrictions proposed in the bill "would virtually destroy the patent system with respect to medicines."

"This proposal obviously strikes directly and crucially at the industry's capacity and incentive for discovery of new and improved medicines, and we vigorously oppose it," he said.

Kefauver indicated he might compromise on the patent provision, saying that he was "not irrevocably wedded to the precise approach" of his legislation.

Kefauver endorsed AMA's expanded drug information program which will put the data directly in the hands of prescribing

physicians in contrast to new FDA regulations which place the emphasis on distribution of new drug information to pharmacists.

"The PMA is supporting and, I trust, will continue to support the new and broadened program it has established with the American Medical Association of disseminating to physicians better and more accurate information concerning the bad as well as the good features of drugs," Kefauver said.

"And it is supporting, and again I trust will continue to support, the new program of the U. S. Pharmacopoeia and the AMA in establishing simpler and more usable generic names for drugs.

"These are important steps forward."

#### Pressure Is On

Pressure is on . . . Make no mistake about it, the Administration is going all out—at every level—to see that a medical care for the aged bill financed by the social security system is enacted . . . The greatest concentration of pressure is on one man—Chairman Wilbur Mills of the House Ways and Means Committee . . . Mills, who was called for a closed-door, face-to-face session with President Kennedy and also for a meeting between Democratic leaders and the Chief Executive, has not retreated from his previous opposition to the social security approach . . . On Sunday, January 14, the Administration openly brandished its club in front of Mills . . . The man chosen to deliver the message was Mike Mansfield of Montana, leader of the Senate's Democratic majority . . . The Vehicle: A televised interview with Senator Kenneth B. Keating (R., N. Y.). Keating asked Mansfield: How do you think the Administration is going to do with its medical care for the aged bill this year? . . . Mansfield replied: I would say that it may well be that medical care for the aged will be considered in the form of an amendment to a bill from the Ways and Means Committee in the Senate. We will only do that if we have to. We would hope that a medical care for the aged bill could be reported out of the Ways and Means Committee, could be passed on the floor of the House, and then referred to us . . . The Administration feels quite strongly that there is a great need for a medical care for

the aged bill. I hope most sincerely, and I anticipate we will, have the chance to vote on this bill—to stand up and be recorded on it.

According to one report, a friend of Chairman Mills surveyed the terrible strain being imposed on the Arkansas Democrat and commented: If Wilbur stands up to this one, he should qualify for inclusion in a revised edition of Jack Kennedy's book, 'Profiles in Courage' . . . Congressman Mills has been medicine's friend and, at this crucial point, deserves all of the help and support medicine can give him.

## MEDICAL NEWS IN TENNESSEE

### Fireside Conferences

#### March 1

The Fireside Conferences are being presented by the Tennessee Chapter of the American College of Chest Physicians at the annual meeting at the Peabody Hotel on the evening of April 10, 1962, in the Venetian Room.

A panel of experts will be seated at each of eleven tables, and physicians attending are invited to ask questions, express their own ideas and comments on the various problems of the subject under discussion. They may move from one table to another if and when they wish. Refreshments will be served with compliments of the American College of Chest Physicians. The eleven subjects for discussion and participants are:

1. PULMONARY SUPPURATION  
Moderator: Duane Carr, Memphis  
Edward Guy Campbell, Memphis  
W. Andrew Dale, Nashville  
David Richard Pickens, Jr., Nashville  
Wesley Harvey Stoneburner, Chattanooga  
William K. Swann, Knoxville
2. PERICARDITIS  
Moderator: David E. Rogers, Nashville  
Blair D. Erb, Jackson  
Robert H. Jernigan, Kingsport  
Frederick H. Knox, Jr., Memphis  
James W. Pate, Memphis  
S. Gwin Robbins, Memphis  
Robert N. Sadler, Nashville
3. FUNGUS  
Moderator: Wheelan D. Sutliff, Memphis  
Frank H. Alley, Memphis  
Robert H. Baker, Knoxville



- Felix A. Hughes, Jr., Memphis  
John C. Larkin, Jr., Memphis  
Robert T. Terry, Nashville  
L. Spires Whitaker, Chattanooga
4. **EMPHYSEMA**  
Moderator: Clarence S. Thomas, Nashville  
James J. Callaway, Nashville  
Harry L. Davis, Memphis  
John A. Jarrell, Jr., Nashville  
Joseph M. Merrill, Nashville  
Clarence C. Woodcock, Jr., Nashville
5. **HYPERTENSION**  
Moderator: Samuel S. Riven, Nashville  
Joseph E. Acker, Jr., Knoxville  
Carl C. Gardner, Jr., Columbia  
Fred Goldner, Jr., Nashville  
James Stanford Haimsohn, Memphis  
Leo G. Horan, Memphis  
Ira T. Johnson, Jr., Nashville
6. **CURRENT THERAPY IN TUBERCULOSIS**  
Moderator: Wilder Walton Hubbard, Nashville  
Walter L. Diveley, Nashville  
James B. Flanagan, Memphis  
Royden Simpson Gass, Nashville  
Glenn E. Horton, Memphis  
Perry M. Huggin, Knoxville  
Robert L. McCracken, Nashville  
Michael M. Marolla, Memphis  
Samuel Phillips, Memphis  
Herbert Tashman, Memphis
7. **CARCINOMA OF THE LUNG**  
Moderator: Thomas B. Haltom, Nashville  
John P. Carter, Chattanooga  
J. Hughes Chandler, Jackson  
Francis H. Cole, Memphis  
Douglas H. Riddell, Nashville  
John L. Sawyers, Nashville  
Edward F. Skinner, Memphis
8. **CONGENITAL HEART DISEASE**  
Moderator: Crawford W. Adams, Nashville  
Jesse E. Adams, Chattanooga  
Raphael N. Paul, Memphis  
Frank A. Puyau, Nashville  
Sam E. Stephenson, Jr., Nashville  
J. Leo Wright, Memphis
9. **CHEST TRAUMA**  
Moderator: David H. Waterman, Knoxville  
Orin D. Butterick, Jr., Memphis  
Sheldon E. Domm, Knoxville  
Bobby H. Ginn, Memphis  
Foster Hampton, Jr., Chattanooga  
George W. Holcomb, Jr., Nashville  
Chester L. Holmes, Jackson
10. **CORONARY ARTERY DISEASE**  
Moderator: Thomas F. Frist, Nashville  
Maury W. Bronstein, Memphis  
James W. Culbertson, Memphis  
Charles B. McCall, Memphis  
Fred D. Ownby, Nashville  
Phineas J. Sparer, Memphis

# 11. RHEUMATIC HEART DISEASE

Moderator: Laurence A. Grossman, Nashville  
James R. Barr, Memphis  
Daniel A. Brody, Memphis  
G. Daniel Copeland, Memphis  
I. Ralph Goldman, Memphis  
Jackson Harris, Nashville  
Sol A. Rosenblum, Nashville

## Medicare Benefits Amended

The following change in Medicare benefits will be applicable to all physicians' claims paid by the Tennessee Hospital Service Association on and after November 1, 1961 bearing a "From" date not earlier than March 1, 1961.

The attending physician will be reimbursed for his cost of poliomyelitis and/or influenza vaccine administered by injection to a dependent eligible to receive care from civilian sources under the Dependents' Medical Care Program when he determines that such immunizations are necessary for proper management of the maternity case. Separate payment is not authorized for professional services and other supplies furnished in the administration of the vaccines, since remuneration is included within the allowances for prenatal care.

The Tennessee Hospital Service Association is authorized to make payment to the attending physicians for claimed cost of poliomyelitis and/or influenza vaccines when services furnished are for medical management or maternity care and the cost of the vaccine is adequately justified. A charge of \$1.00 per injection is considered reasonable cost of the vaccine; therefore, charges not in excess of \$1.00 per injection, when claimed, may be paid without the necessity for specific justification. When the claimed amount is in excess of the \$1.00 per injection, justification is necessary. Adequate justification will include the manufacturer's name, the attending physician's cost and source of supply.

## Medical Assistance to the Aged Program Broadened in the State

The Medical Assistance to the Aged Program was expanded effective January 1, 1962. The expansion will allow a larger number of aged persons to qualify for the medical aid benefits which were authorized by the 1961 legislature.

The program has been changed so that: 1) persons having as much as \$8,000 unencumbered equity in real estate will be eligible; 2) the amount of hospital expense which the aged patient must pay himself was reduced from the \$100 amount to \$25; and 3) the drug formulary was expanded.

From July through November, the State Welfare Department reported that 3,025 persons had applied for medical aid. Of that number, 176 were hospitalized at a total cost of \$25,973. In addition, 61 persons were certified as being eligible during the five month period to receive drugs under the program. The drug cost amounted to \$2,355.

The regulations now limit each patient to ten days hospitalization in one year and thirty days of drug supply.

### **Vanderbilt University School of Medicine**

The U. S. Public Health Service has approved two research grants totaling \$250,571. One grant, totaling \$228,896 will be used to create new medical and clinical research facilities. Another of \$21,675 will go to help remodel the sanitary engineering laboratory in the School of Engineering.

### **University of Tennessee College of Medicine**

A five-year research grant of \$105,000 has been awarded to Dr. James W. Fisher, assistant professor of pharmacology.

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Another grant of \$100,000 by the National Institutes of Health of the U. S. Public Health Service has been made to support a four-year three part study of the role of the kidney as it is related to the general circulatory system of man.

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The seventh Memphis Heart Association lecture was presented by Dr. Hyman S. Mayerson, chairman of the Department of

Physiology at Tulane University in New Orleans. He is the present president-elect of the American Physiological Society.

### **University of Tennessee Memorial Research Center**

Matching funds of the federal grant of \$480,714 for the construction of a clinical research laboratory at the University of Tennessee Memorial Research Center and Hospital now total some \$405,000.

### **Department of Public Health**

January 5, 1962

Dear Dr. Kampmeier:

We have been requested by the Public Health Council to submit to you for publication in the State Medical Journal a listing of the Civil Defense Emergency Hospitals in Tennessee, in order that the doctors throughout the state will know where these hospitals are located.

There are 37 Civil Defense Emergency Hospitals located in Tennessee. First, we have listed the city, county, and storage place of the hospital and then the name of the custodian and his address. These are 200 bed hospitals.

Yours very truly,  
R.H. HUTCHESON, M.D.  
Commissioner

### **Vanderbilt University School of Medicine**

Several years ago friends of the late Dr. Hugh J. Morgan established the Hugh J. Morgan Visiting Professorship. Dr. Francis Wood, Professor of Medicine at the University of Pennsylvania, recently spent a week as a visiting professor. The first of those who have been so honored was Dr. Sidney Burwell of Harvard Medical College, in 1959. In the interim there have been three other visiting professors—Dr. Robert Williams, University of Washington; Dr. Chester Jones, Harvard, and Dr. David Barr of Cornell University.

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**Observations on the Treatment of Salicylism in Children. S. B. Friedman and J. F. Stocks. New Engl. J. Med.—Vol. 265:1237 (Dec 21) 1961.**

Treatment of salicylism by bicarbonate administration, acetazolamide, exchange transfusion or dialysis is reviewed and compared to the results achieved with a program of intravenous therapy.

Four cases are presented with a discussion of potential risks associated with various medical regimens. Suggested therapy in severe cases includes immediate correction of clinically significant hypovolemia and intravenous administration of a potassium containing multiple electrolyte solution at the rate of six liters per square meter of body surface per 24 hours.



## CIVIL DEFENSE EMERGENCY HOSPITALS IN TENNESSEE

- |   |   |  |
|---|---|--|
| (1.) Blountville (Sullivan Co.)<br>Sullivan Co. Health Center<br>Dr. J. W. Erwin, Custodian<br>212 Maple Tree Dr.<br>Bristol  | Forrest Hills Dr.<br>Columbia   | 200 S. Locust Ave.<br>Mr. Asher H. Jeffers,<br>Custodian   |
| (2.) Bolivar (Hardeman Co.)<br>Bolivar Central High School<br>W. Jefferson St.<br>Dr. J. Knox Tate, Custodian<br>203 W. Market St.<br>Bolivar   | (10.) Cookeville (Putnam Co.)<br>General Hospital<br>141 W. 4th St.<br>Dr. Nathan A. Morgan,<br>Custodian (Hosp. Adm.)<br>239 E. 6th St.<br>Cookeville  | (19.) Lewisburg (Marshall Co.)<br>Allstar Mfg. Corp.<br>591 Second Ave. North<br>Dr. Kenneth Brown,<br>Custodian         |
| (3.) Brownsville (Haywood Co.)<br>Haywood Co. High School<br>Gym<br>127 Grand Ave.<br>Dr. Julian K. Welch,<br>Custodian<br>310 E. College St.<br>Brownsville  | (11.) Copperhill (Polk Co.)<br>Copper Basin Hospital<br>Box 216<br>Mr. W. H. Jenkins,<br>Custodian<br>Box 295<br>Copperhill   | (20.) Livingston (Overton Co.)<br>Natl. Guard Armory (Old)<br>Off 7th St., North<br>Dr. W. G. Quarles, Jr.,<br>Custodian |
| (4.) Brunswick (Shelby Co.)<br>Shelby Co. Brunswick High<br>School (White)<br>One block West Rd. Junction<br>—Brunswick & Baylor Rd.<br>Mr. Alex A. Dacus,<br>Custodian<br>% Marion D. Dacus<br>Brunswick | (12.) Dresden (Weakley Co.)<br>National Guard Vehicle<br>Storage Bldg.<br>Gleason Hwy. #22 at City<br>Limits of Dresden<br>Dr. M. R. Beyer, Custodian<br>County Health Dept.—<br>Court House<br>Dresden | (21.) McMinnville (Warren Co.)<br>Civil Defense Bldg.<br>Cedar St.<br>McMinnville  |
| (5.) Calhoun (McMinn Co.)<br>Calhoun Elementary School<br>Mr. Charles A. Murray, Jr.,<br>Custodian<br>McMinn Co. Health Center<br>W. College St.<br>Athens  | (13.) Fayetteville (Lincoln Co.)<br>Holman Bldg.—E. Market St.<br>Mr. William E. Barnes,<br>Custodian<br>417 Hillview Dr.<br>Fayetteville   | (22.) Paris (Henry Co.)<br>City Auditorium<br>N. Market and Rison Sts.,<br>N.E.<br>Mr. William J. Stout,<br>Custodian    |
| (6.) Camden (Benton Co.)<br>Camden Jr. High School<br>23 S. College St.<br>Dr. A. T. Hicks, Custodian<br>Mr. Charles G. Hudson<br>(Assistant Custodian)<br>301 Church St.<br>Camden                       | (14.) Forrest Hills (Shelby Co.)<br>Shelby Co. Forrest Hills Schl.<br>¼ mile S. Road Junction US<br>72 & F. H. Irene Rd.<br>Mr. Tom Wright, Custodian<br>—9051 Old Poplar Pike<br>Germantown            | (23.) Pikeville (Bledsoe Co.)<br>City Hall<br>City Hall St.<br>Mr. Alden Boynton,<br>Custodian                           |
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| (9.) Columbia (Maury Co.)<br>Maury Co. Health Center<br>Mt. Pleasant Highway 2½<br>miles from square<br>Dr. W. N. Cook, Custodian   | (17.) Jellico (Campbell Co.)<br>Central Drug Bldg.<br>S. Main St.<br>Mr. James F. Petree,<br>Custodian<br>High School Principal<br>Jellico  | (26.) Ripley (Lauderdale Co.)<br>Old Ice Storage Brick Bldg.<br>E. Washington St.<br>Dr. A. J. Butler, Jr.,<br>Custodian |
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| Mr. LeRoy B. Stansell,<br>Custodian (Hosp. Adm.)<br>Lakemont Dr.<br>Rockwood   | age System<br>210 N. Spring St.<br>Dr. W. L. Chambers,<br>Custodian<br>Shelbyville   | (34.) Sweetwater (Monroe Co.)<br>Municipal Bldg.<br>Corner Monroe and Oak Sts.<br>Mr. N. H. Harris, Custodian<br>501 Summit St.<br>Sweetwater                   |
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| (30.) Shelbyville (Bedford Co.)<br>Former Office & Warehouse<br>of Water, Electric & Sew-  | (33.) Sparta (White Co.)<br>Former Physician's Offices<br>102½ Broadway<br>Mr. Wm. Lloyd Black,<br>Custodian<br>County Court House<br>Sparta   | (37.) Waverly (Humphreys Co.)<br>Grain Storage Bldg.<br>200 feet south of 1216 East<br>Main St.<br>Dr. A. C. Emmert, Custodian<br>133 Cedar Hill Dr.<br>Waverly |



Dr. Thomas C. Littlejohn was appointed *Chief Medical Examiner* under the Post-Mortem Examination Act, passed in the last term of the Legislature, in September 1961. Since then he has approached the counties relative to having the County Courts appoint a County Medical Examiner. He has visited several counties and discussed the Medical Examiner's System with the interested parties. He has set up a system whereby post mortem examinations are done in the tuberculosis hospitals of the State, and has twelve of the eligible pathologists in Nashville agreeing to do autopsies. Forms have been prepared for the County Medical Examiners in the investigation of deaths under their jurisdiction. Forms are also being prepared for the District Attorneys-General to order the autopsies. Letters have been sent to the sheriffs and chiefs of police and to the funeral homes throughout the State, advising them of the Post-Mortem Examination Act.

On January 8th, area meetings were held in some sixteen locations to explain the medical examiner system to the interested officials. Mr. Martin Karst, formerly with the Maryland State Medical Examiner's System, has assumed the duties of toxicologist. The toxicology laboratory is one of the best equipped in the Country. In this laboratory all postmortem examination procedures will be carried out, including blood

alcohol, carbon monoxide and tests for other poisons. The toxicology laboratory is also helping in the narcotics identification for the Tennessee Bureau of Investigation as well as setting up a poison control center.

Dr. Littlejohn has personally assisted in several of the autopsies, and thus far at least one man has been exonerated because of the investigation and at least two others have admitted their crimes, on the information furnished by the medical examiners to the State and local authorities.

Appropriately Dr. Littlejohn has appointed Mrs. Graves as secretary for the Post-Mortem Examination Service.

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## PERSONAL NEWS

**Dr. Bernard M. Zussman**, Memphis, recently spoke before the Health Committee of the Southern Bell Telephone Company on the subject of "Living with Your Allergy."

**Dr. J. T. Francisco**, Memphis, has been appointed medical examiner for Shelby County.

**Dr. W. S. Myers**, has announced the opening of his office for the practice of medicine in Obion.

**Dr. Charles B. Harvey**, Tullahoma, is the new chief of staff at the Coffee County Hospital in Manchester. **Dr. Charles H. Webb**, Tullahoma, was elected vice chief of staff, and **Dr. John Shields**, Manchester, secretary-treasurer.

**Dr. Robert Proffitt** has opened his office for the practice of medicine in Blount County at Maryville.

**Dr. Lowry Dale Kirby** and **Dr. William T. Slo- necker**, Nashville, announce the opening of an office at 3706-A Nolensville Road.

**Dr. Blair Erb**, Jackson, recently addressed the Jackson Civitan Club.

**Dr. Glen Shults**, Newport, has been elected county medical examiner for Cocke County.

**Dr. F. E. Reeder**, McKenzie, has been appointed medical examiner for Carroll County.

**Dr. Alvin J. Ingram**, Memphis, recently addressed the Memphis Industrial Nurses Association.

**Dr. John H. Tilley**, Lebanon, has been named President of the Wilson County Medical Society. **Dr. A. T. Hall** is the new vice president and **Dr. T. R. Puryear** has been reelected secretary-treasurer.

**Dr. George A. Zirkle**, Knoxville, has been elected President of the Knoxville Area Virginia Polytechnical Institute Alumni Association.

"The Different Phases of Psychiatry" was the subject presented by **Dr. Robert H. Gentry**, Knoxville, before the Knoxville Chapter of Medical Assistants Society of Tennessee.

**Dr. B. F. Byrd, Jr.**, Nashville, has been appointed to the Clinical Fellowship Committee of the American Cancer Society.

Newly elected officers of the Bristol Memorial Hospital staff are: **Dr. Bennett Y. Cowan**, chief of staff; **Dr. Ellis Harr**, secretary; **Dr. Homer Williams**, immediate past chief of staff; **Dr. Lawrence Stringfellow**, chief of medicine; **Dr. Frank Blanton**, chief of surgery; and **Dr. William Grigsby**, chief of obstetrics and pediatrics. **Dr. Tom Green** is vice chief of staff.

**Dr. Edward M. Kelman**, Maryville, is the new president of the Blount County Medical Society. The vice president is **Dr. James Henry** and the secretary-treasurer is **Dr. Oliver Agee**.

**Dr. David E. Rogers**, Nashville, has been named one of the nation's ten outstanding young men by the United States Junior Chamber of Commerce.

**Dr. John A. Shields**, Manchester, has become associated with the Young & Gardner Clinic. The clinic will be known as Young-Gardner-Shields Clinic.

**Dr. W. G. Quarles, Jr.**, Livingston, has been elected District Ten Board Member of the American Cancer Society, Tennessee Division.

**Dr. Chester G. Allen**, Memphis, has been named president-elect of the Memphis Branch of the Southeastern Section of the American Urological Association. **Dr. Holt Maddux** was named secretary-treasurer for 1962 and **Dr. John Hamsher** is president for 1962.

**Dr. John Farringer**, Nashville, and **Dr. John W. Adams** of Chattanooga, have been appointed by the Governor to the Tennessee Board of Nursing.

**Dr. John E. Neumann**, Paris, has been named medical examiner for Henry County.

**Dr. John E. Kesterson**, Knoxville, has been named chief of staff at Baptist Hospital. Other staff officials named were: vice chief of staff, **Dr. Fred Hufstedler**; secretary, **Dr. Norma Walker**; executive committee, **Drs. George Trotter**, **Abner M. Glover**, **Frank London** and **Elton E. Shouse**; chief of general practice, **Dr. M. F. Cobb**; chief of surgery, **Dr. Charles Zirkle**; chief of medicine, **Dr. Richter Wiggall**; and chief of obstetrics-gynecology, **Dr. K. A. O'Connor**.

**Dr. Charles Sienknecht**, Knoxville, has been elected chief of staff at Ft. Sanders Presbyterian Hospital. Other officers elected were **Dr. Frank J. Slemmons**, vice chief of staff; **Dr. Roy W. Hall, Jr.**, secretary; **Dr. Alton Absher**, chief of general practice; **Dr. William H. Gardner**, chief of obstetrics and gynecology; **Dr. R. B. Wood**, chief of medicine and **Dr. Sheldon E. Domm**, chief of surgery.

**Dr. William Robert Fowler**, Chattanooga, has been certified a Diplomate of the American Board of Surgery.

**Dr. H. Dewey Peters** has been installed as President of the Knoxville Academy of Medicine; **Dr. Richard Sexton** is President-Elect.

## BOOK REVIEW

**Respiration in Health and Disease.** By **R. M. Charniak, M.D., M.Sc., F.R.C.P.(C.)**, Assistant Professor of Medicine, and **L. Charniak, M.D., B.Sc., F.R.C.P.(C.)**, Assistant Professor of Medicine, both at the University of Manitoba School of Medicine, Winnipeg, Canada. 381 pages. Philadelphia: W. B. Saunders Co., 1961. Price \$10.50.

This book first presents a review of the characteristics of respiration—the anatomy, physiology

and control of respiration. From this it proceeds to discuss the signs and symptoms of respiratory disease, the patterns of pulmonary disease, both primary pulmonary and pulmonary disease due to cardiovascular changes, an excellent review of the clinical assessment of the patient with pulmonary disease and the functional assessment of the disease. The book is an excellent addition to any physician's library whether he be primarily interested in diseases of the respiratory system or engaged in general practice. The authors have done a superb job of bringing together in one book both the more well known problems of respiratory physiology and disease with more recent concepts of respiratory disease.

LAWRENCE G. SCHULL, M.D.

**Light Coagulation.** By **Gerd Meyer-Schwickerath, M.D., Municipal Eye Clinic, Essen, Professor of Ophthalmology, University of Bonn.** Translated by **Stephen M. Drance, M.B., F.R.C.S., Associate Professor of Ophthalmology, University of Saskatchewan.** 114 pages. St. Louis: The C. V. Mosby Co., 1960. Price \$9.50.

Duplicating the detrimental power of the sun's rays from an electrical source and using it beneficially in the treatment of ocular disorders was a contribution of the German ophthalmologist, Gerd Meyer-Schwickerath. This translation of his work into English was necessitated by the introduction of the light coagulator instrument into the United States. The technique is a very specialized one requiring great caution and complete understanding before being utilized.

The contra-indications and indications and methods of application of light coagulation therapy are described. The translation is very understandable, the text being read as if originally written in English. The drawings and photographs aid in the interpretations and information which the author desires.

This basic text, describing a new tool for the ophthalmologist, should be available in all institutional libraries.

## ANNOUNCEMENTS

### Postgraduate Day in Surgery at Vanderbilt University School of Medicine

On Thursday, March 22, 1962, the Department of Surgery at Vanderbilt University Hospital will present a post-graduate program entitled "Common Pediatric Surgical Problems." This one day course will cover general surgical, orthopedic, genito-urinary, and neurosurgical problems along with panel discussions of preoperative diagnosis and operative management in children.

The Course is approved for Category I credit by the American Academy of General Practice. Tuition is \$15.00 which includes the luncheon. For further information address the Department of Postgraduate Instruction, Vanderbilt University School of Medicine, Nashville.



## Medical College of Georgia

Early recognition and proper management of problems arising in the pre and post surgical states will be featured in the continuing education course "Pre and Post Operative Care" scheduled for March 20-22, 1962 at the Medical College of Georgia.

Case analysis clinics will be held with active participation by registrants and the presentation of problem cases will be encouraged.

Each course is acceptable for 18 hours credit by the American Academy of General Practice. Registration fee is \$50.00. Application may be made by writing to the Department of Continuing Education, Medical College of Georgia, Augusta, Georgia.

## AMA Conference on Mental Health In Chicago, February 2-3

The Eighth Annual Conference of Mental Health Representatives of State Medical Associations was held at the Drake Hotel in Chicago, February 2-3. Theme of the meeting was "Implementation of the American Medical Association's Program on Mental Illness and Health."

Dr. Leo H. Bartemeier of Baltimore, Maryland, Chairman of the AMA Council on Mental Health, said the program was devoted to a discussion of the proceedings of the preliminary program conference held last September, together with formulation of plans for the first AMA National Congress on Mental Health which will be held next October.

## YOUR NEXT MEETING

The 127th Annual Meeting of the Tennessee State Medical Association is scheduled for Memphis in the Peabody Hotel, April 8-11, 1962. Some very interesting innovations are planned for the next meeting of the Association, so mark the dates now even though the event is a couple of months away.

## Gill Memorial Spring Congress

The Thirty-Fifth Annual Spring Congress in Ophthalmology and Otolaryngology will be held at Roanoke, Virginia, April 2-6. For further information write the Gill Memorial, Eye, Ear and Throat Hospital, Roanoke.

## Southeastern Surgical Congress

The Thirtieth Annual Assembly will be held at the Brown Hotel, Louisville, Kentucky, March 5-8. Many national authorities in the surgical fields are scheduled to appear on the program. Further information may be obtained from Dr. A. H. Letton, 340 Boulevard, N.E., Atlanta 12, Georgia.

## Augusta Postgraduate Medical Assembly

The Postgraduate Medical Assembly of the Richmond County Medical Society of Augusta, Georgia is scheduled for April 2-4, with medical, surgical, psychiatric, pediatric and obstetric-gynecological sessions. The Assembly is approved for American Academy of General Practice credit. Further information may be obtained from the Richmond County Medical Society, Augusta.

## The University of Colorado School of Medicine Postgraduate Course

The University of Colorado School of Medicine is presenting a course in "The Management of Trauma," which is co-sponsored by the Colorado Committee on Trauma of the American College of Surgeons, March 7-9. Further information is obtainable through the Office of Postgraduate Medical Education, University of Colorado Medical Center, 4200 East Ninth Avenue, Denver 20.

## Postgraduate Day in Psychiatry at Vanderbilt University School of Medicine March 1

The Department of Psychiatry is offering a one-day Postgraduate Course on "Understanding of the Psychiatric Patient and His Problems." Emphasis will be placed upon the understanding and the treatment in the doctor's office. The general practitioner plays an important role in the treatment program by treating some of the psychiatric illnesses himself or by helping the family to accept and participate in the sometimes, but not always, stormy course and final readjustment of the patient.

The course is approved for Category I credit by the American Academy of General Practice. Tuition is \$15.00 which includes the luncheon. For further information address the Department of Postgraduate Instruction, Vanderbilt University School of Medicine.

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## PLACEMENT SERVICE

*The Placement Service of the Tennessee State Medical Association is designed to assist doctors and communities to get together. Further information and contacts to both physicians and communities are available from the Public Service Office 112 Louise Avenue, Nashville 5, Tennessee.*

### Locations Wanted

A 32 year old Internist would like group practice or teaching position in Tennessee community of 20,000 and over in east of middle Tennessee area. Two years residency. Married; protestant; graduate Harvard Medical College. Available immediately. LW-409

A 29 year old general practitioner, now in military service, would like to associate in clinical practice in small west Tennessee community upon completion of service. One year residency in internal medicine. Married; Methodist; graduate University of Maryland. Available Sept. 1962. LW-423

A 30 year old Internist, with two years residency, would like to establish clinical or associate practice in any Tennessee community, 30,000 plus. Married; protestant; graduate Medical College of Virginia. Available July 1962. LW-430

A 37 year old Urologist would like to establish clinical or associate practice in any size community of east or west Tennessee. Five years residency, including internal medicine and surgery training. Married; Methodist; graduate Meharry Medical College. Available July 1962. LW-431

A 48 year old Ophthalmologist, with four years residency training, would like clinical, associate or group practice in any section of Tennessee, but prefers large community of 50,000 plus. Married; Lutheran; Graduate Indiana University School of Medicine; Fellow of American Academy of Ophth. and Otol. Available immediately. LW-432

A 33 year old, Otolaryngologist, two years residency, would like clinical, assistant or associate practice in any community in Tennessee of considerable size. If conditions favorable, would consider solo practice. Married; Jewish; graduate Jefferson Medical College of Philadelphia. Available September 1962. LW-433

A 31 year old Board Certified Anesthesiologist would like group practice in middle or west Tennessee community of considerable size. Residency training. Married; protestant; graduate Indiana University. Available April 1962. LW-434

A 32 year old Board eligible Ob-Gyn with four years residency, would like clinical or institutional practice any community in Tennessee. Married; Presbyterian; graduate University of Tennessee. Available July 1962. LW-435

A 29 year old general practitioner would like to establish clinical or group practice in any community in Tennessee of 10,000 plus. Married; Protestant; graduate University of Louisville. Available August 1962. LW-436

A 32 year old general surgeon, with four years residency, would like clinical, associate or solo practice in east or middle Tennessee. Married; Protestant; Graduate Emory University. Available July 1962. LW-437

### Physicians Wanted

Physician in east Tennessee community of 6,000 wishes an associate for general practice. Age 25-35 with one year internship. New, private office; examining rooms and equipment available. Hospital located in area. PW-134

Middle Tennessee community of slightly over 800 in need of general practitioner. No other physician in immediate area. Office space and hospital privileges. Near good recreational area. PW-139

Physician in middle Tennessee town of 200,000 would like associate or independent internist or GP. Office space and equipment provided. PW-146

Physician in middle Tennessee community of over 15,000 in need of physician for practice of Ob-Gyn either on good salary plus percentage graduating into full partnership, or associate. PW-161

Completely furnished office, including x-ray equipment, in suburban area of large middle Tennessee city, available for immediate occupancy to one or two general practitioners wishing to establish private practice. Excellent location, reasonable. PW-163

Two practicing Internists in large eastern city would like associate to work into full partnership. Large, modern, well-equipped office in downtown medical office building. Three years residency, under 36 years of age, willing to start on good straight salary (starting salary open) for one year, desired. PW-167

Large, well arranged office including four examining rooms with attached baths in thriving city in middle Tennessee available to one or two physicians. Other physicians in community offer cooperation. Good housing and schools. PW-170

Surgeon wanted to assume practice of surgeon leaving July 1962, in middle Tennessee city of over 200,000. Furnished office available in clinic with Obs-Gyn and dentist. PW-171

Furnished office available in clinic located in suburb of middle Tennessee city of over 200,000 for Internist to assume practice of physician leaving July 1962. PW-172

Hospital in upper east Tennessee county with population of over 30,000, would like general surgeon to establish own surgical practice in area. Would like physician with one years internship, three years residency, Board qualified or Board preferred. Good industrial area with excellent schools and churches; near TVA lakes. PW-173

## Rational Use of Cancer Chemotherapeutic Agents. Part I: Antimetabolites and Alkylating Agents

RICHARD C. SEXTON, JR., M.D., Knoxville, Tenn.

*Much experimentation is going on in the use of chemotherapy as a palliative measure when surgery or radiation therapy have nothing to offer. The author reviews some of the substances available for such therapy.*

Increasing interest in cancer chemotherapy has been evident in recent years for several reasons. Only about one-third of patients with malignant neoplastic disease are alive five years after the diagnosis is established. It has been estimated that earlier detection would only increase the percentage of patients alive at the end of five years to about 50 percent. Many patients, particularly those with visceral malignancies, are obviously beyond surgical or radiation cure at the time the disease is detected. An attempt at surgical therapy of many lesions necessitates extensive, often disfiguring, surgical procedures. There is, therefore, no question about the propriety of newer and bolder therapeutic approaches to the challenge presented by cancer. This communication shall concern itself with a review of the available cancer chemotherapeutic agents and their rational use. The term "chemotherapy" is used in its broad, commonly accepted, connotation. Cancer

chemotherapeutic agents may be classified as follows:

- I. Antimetabolites
  - (a) 6-mercaptopurine
  - (b) Amethopterin and aminopterin
  - (c) 5-fluorouracil
- II. Alkylating agents
  - (a) Nitrogen mustard ( $\text{NH}_2$ )
  - (b) Triethylene melamine (TEM)
  - (c) Triethylene phosphoramide
  - (d) Triethylene thiophosphoramide (TSPA)
  - (e) Chlorambucil (Leukeran)
  - (f) Busulfan (Myleran)
  - (g) Cyclophosphoramide (Cytosan)
  - (h) Uracil mustard
- III. Steroids
  1. Sex steroids
    - (a) Estrogenic substances
    - (b) Testosterone
  2. Corticosteroids
  3. Adrenocorticotrophin
- IV. Miscellaneous agents

### Antimetabolites

An antimetabolite can best be defined as a substance which differs in structure but is closely related to substances normally utilized by cells in their metabolic activity. It exerts its activity in one of three ways. It may block enzymatic activity, compete with normal cellular substrate, or be incorporated in such a fashion as to produce an abnormal substance. In so doing, it interferes with synthesis of nucleic acid, thus inhibiting proliferation of neoplastic and some normal cells. In effect, most of the commonly used antimetabolites produce a deficiency of nucleic acid.<sup>1, 2, 3</sup>

Of the folic acid antagonists, *aminopterin* and *amethopterin* are the two most commonly employed. They exert their action by interfering in the conversion of folic acid

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to folic acid. This deprives the cell of single carbon fragments for the synthesis of amino acids, purines, and pyrimidines. Bone marrow depression and gastrointestinal lesions result from these activities, and these changes become clinically evident when large doses are used. Of the folic acid antagonists, 4-amino-n<sup>10</sup>-methyl pteroylglutamic acid (Methotrexate) is the most commonly employed. Approximately 50% of children with acute leukemia exhibit improvement when given this agent, while about 30% experience a complete remission of their disease. Patients with high-count leukemias probably benefit most from its use. Involvement of the central nervous system may develop in some patients receiving antimetabolites, even in the presence of a peripheral hematologic remission and a clinical remission. Amethopterin (Methotrexate), intrathecally, is particularly useful in these patients. It should be added that local radiation therapy seems to be equally efficacious. Major toxic effects from these substances include bone marrow depression, ulcerative lesions of the gastrointestinal tract, and alopecia. The latter may become total in case of continuation of the drug. It is given in a dosage of 2.5 to 5 mg. per day. The dosage is, of course, monitored with frequent white blood count and differential determinations.

The *purine antagonists* include 6-mercaptopurine, 6-chloropurine, 6-thioquanine, and others. Six-mercaptopurine (Purienthol) is the one most commonly used. It interferes in some way in the utilization of physiologic purines in the synthesis of nucleic acid and in the activity of purine-containing coenzymes. It is a rather potent bone marrow depressant, and this is the manner in which it reflects its toxicity. Because of this, its effects must be watched closely with frequent white blood count and differential determinations. About 70% of patients with acute leukemia experience improvement when given this agent, while substantial remissions occur in 50% of these patients. Initial dosage is 2.5 mg. per kilogram per day until clinical hematologic improvement is forthcoming, after which a daily dosage of 50 to 150 mg. is given.

Remissions in acute leukemia may last from a few weeks to several months. When

relapse becomes evident another agent may be substituted and will often induce a second remission of variable duration. About 50% of children with acute leukemia now survive for one year or longer as contrasted with an average survival of about four months prior to the introduction of antimetabolites in 1948. Unfortunately, however, the disease always eventually escapes the suppressive effects of these agents. In general, the younger the patient with acute leukemia the better the response to both antimetabolites and adrenal steroids. I prefer a combination of antimetabolites and corticosteroids in older adults.

Temporary improvement has been reported in patients with disseminate mammary cancer treated with 6-mercaptopurine. Wright and associates<sup>4, 5</sup> indicate that "temporary improvement occurred in 10 cases with disseminate breast cancer, equivocal results in 9, and progression of the disease in 17." Treatment usually has to be given over a period of two weeks to three months before clinical improvement is evident.

Amethopterin was employed by Hertz and associates<sup>6</sup> with the United States Public Health Service Clinical Center at Bethesda in 1958 in the treatment of chorio-carcinoma. A dosage of 10 to 25 mg. per day, intramuscularly or intravenously, was usually employed over a four- or five-day period, or until bone marrow depression dictated a suspension of treatment. After bone marrow recovery, another course of treatment was given repetitiously, as needed, to sustain suppression of tumor activity. Response is reflected by striking decreases in the urinary excretions of gonadotrophins.

Combined therapy employing amethopterin and TEM has been used in some epithelial tumors, but results are thus far inconclusive. When used in this manner, 15 to 25 mg. of amethopterin is given daily for four or five days, and TEM, 5 mg., is given on the first and fourth days of treatment. I anticipate that the incidence of severe bone marrow depression will be high with this regimen.

Heidelberg described 5-fluorouracil in 1956. This agent and other *fluorinated pyrimidines* are capable of severe bone marrow depression. 5-fluorouracil is a py-

rimidine antagonist, and its mechanism of action is presumed to be somewhat similar to that of 6-mercaptopurine. Here again there is inhibition of nucleic acid synthesis with resultant metabolic derangement.

Hurley and Ellison<sup>7, 8</sup> report some responsiveness of malignancies of the colon and pancreas to repeated courses of 5-fluorouracil. Five out of 9 patients with advanced carcinoma of the pancreas had a remission to 5-fluorouracil. In their experience the alkylating agents were of no avail in this group of patients. Twelve of 29 patients treated for carcinoma of the colon exhibited remissions varying from two to seven months. Some patients also responded to combination therapy in which 5-fluorouracil was one of the agents used. Carcinoma of the esophagus was found to be resistant not only to 5-fluorouracil but to other chemotherapeutic agents alone and in combination. The authors conclude that the debilitated state of many of these patients precluded response. Patients with breast carcinoma have also shown some response to 5-fluorouracil.

Deren and Wilson<sup>9</sup> have reported on the use of 5-fluorouracil in the treatment of carcinoma of the urinary bladder. Ten patients with advanced lesions were treated. Tumor regression was observed in all cases. In some of these patients repeated responses were observed to different courses of treatment. The courses of treatment were given at ten to twelve week intervals, dependent on the indications. Toxicity was regarded as low and no drug-fastness was observed.

Currently, 5-fluorouracil is being administered intravenously in a dosage of 15 mg. per kilogram daily for five days. After this it is given in a dosage of 7.5 mg. daily every other day for four doses. The total dose for any one day is not allowed to exceed 1000 mg. This limits the total dose for any one course to 7000 mg. Therapy with this agent is usually abandoned if no response has occurred after two courses of treatment. Toxicity is noted more in repeated courses of treatment. This is usually minimized by the omission of one daily dose. This agent is provided in 500 mg. ampules. Reaction to extravasation is minimal. It is believed to exhibit its activity within five to seven

minutes after injection. It is not available on the market at the time of this writing.

### Polyfunctional Alkylating Agents

These agents can introduce alkyl groups into biologic materials, hence the term polyfunctional. They injure both normal and neoplastic cells, but their injurious effects are greater, in general, in the latter group of cells. They are truly cytotoxic agents and because of the similarity of their effects to those of radiation, they are often referred to as radiomimetic agents.

The commonly employed alkylating agents are as follows:

- (1.) Methyl-bis (B-chlorethyl) amine hydrochloride (Mustargen, HN<sub>2</sub>)
- (2.) Triethylene melamine (TEM)
- (3.) Triethylene phosphoramidate (TEPA)
- (4.) Triethylene thiophosphoramidate (Thio-TEPA, TSPA)
- (5.) Busulfan (Myleran)
- (6.) Chlorambucil (Leukeran)
- (7.) Phenylalanine mustard (PAM)
- (8.) Cyclophosphoramide (Cytosan)
- (9.) Uracil mustard

These agents have their forte in the treatment of the lymphomas. In general, the use of chemotherapeutic agents in the lymphomas is limited to patients in whom the disease is producing systemic manifestations or in whom the disease is diffusely symptomatic. Some therapists elect to use them in conjunction with radiotherapy in patients in whom the disease is confined regionally in an effort to induce a long lasting remission.

These agents, like most other cancer chemotherapeutic agents, are double-edged swords in that they can be quite beneficial in appropriate doses but can be lethal in excessive dosage. They can induce irreversible depression of the bone marrow. Here again it is emphasized that frequent white blood counts and differential determinations must be done to avoid irreversible toxicity. Someone has aptly said that the patient rather than the cancer determines the extent to which these agents can be given. Only patients in whom one cannot expect cure or substantial palliation by surgical or radiotherapy should be submitted to chemotherapy. If possible, only one agent should be used at a time to better



assess its efficacy and to minimize toxicity. Some recent reports, however, on the use of combinations of cancer chemotherapy in certain malignant states have appeared and will be alluded to later. Even though precaution is necessary in the use of these agents, it must be remembered that a moderate leukopenia must be induced if desired therapeutic results are to be achieved.

Of the alkylating agents, *nitrogen mustard* is the most commonly used. It is given intravenously in a dosage of 0.4 mg. per kilogram along with antiemetic agents as needed to counteract its emetic effects. This can be divided in four equal doses at daily intervals, or can be given in one single dose. I prefer the latter technic. Its use is best reserved for those patients in whom the disease is diffusely symptomatic or those patients with systemic manifestations. It is the drug of choice in the treatment of Hodgkin's disease. Patients with lymphosarcoma often benefit from its use. Patients with lymphocytic leukemia are quite sensitive to it. Chlorambucil and TEM, however, are generally preferable to nitrogen mustard in these latter patients.

About 30% of patients with inoperable bronchogenic carcinoma will derive some objective benefit from nitrogen mustard. Some reports indicate that as many as 50% of these patients experience subjective improvement. Unfortunately, the benefits are transient. TEM may be used with somewhat comparable benefits and is suitable for ambulatory patients. The dosage range is from 10 to 50 mg. per month in divided doses with appropriate vigil for hematopoietic depression.

Hurley and Ellison<sup>7, 8</sup> found carcinoma of the esophagus to be resistant to nitrogen mustard. On the other hand, some response was noted in patients with hepatobiliary carcinoma treated with nitrogen mustard and TSPA. This series of patients, however, was quite small, and a more secure opinion regarding the effectiveness of this agent in these patients will have to await a more extended study. These same authors also concluded that nitrogen mustard, either alone or in combination, provided some effective palliation in patients with advanced carcinoma of the stomach. Here, as in other gastrointestinal malignancies with hepatic

spread, it was their impression that those patients with hepatic metastases exhibited the least response.

The dosage of nitrogen mustard in patients with solid tumors is about 0.6 mg. per kilogram in two divided doses on alternate days. In subsequent courses of treatment, 0.4 mg. per kilogram is usually employed. Courses of treatment are repeated as clinically indicated provided hematopoietic toleration will permit.

*Triethylene melamine* has about the same spectrum of activity as nitrogen mustard and can, therefore, be used in much the same clinical situations. It is especially adaptable to ambulant patients because of the ease of oral administration. One of its most useful applications is in the treatment of metastatic or widespread intra-abdominal ovarian carcinoma. Approximately 20 to 30% of these patients will show objective improvement, and about 40% will experience symptomatic relief. Pleural and peritoneal effusions may disappear. In some instances systemic administration can be supplemented by intracavitary instillation for the control of recurrent effusion. ThioTEPA and nitrogen mustard are equally efficacious when instilled into body cavities. They have also been used systemically in these patients with fairly good results. In general, however, it appears that most workers prefer TEM in this particular group of patients.

*Triethylene phosphoramidate* and ThioTEPA have been used in the lymphomas, but most therapists prefer one of the aforementioned alkylating agents. Bateman and associates have reported on the use of these agents in palliation of metastatic mammary cancer. They utilized the intramuscular, intravenous, intrapleural, intratumor, and intrapericardial routes of administration. Treatment was given at one to two week intervals. They noted decrease in size of soft tissue masses, improvement in symptoms from involvement of the central nervous system, control of serous effusions, and recalcification of osseous lesions. These agents should, of course, be integrated into the total care program with careful attentiveness to the propriety of other therapeutic approaches, such as hormonal ablative surgery, sex hormones, radiotherapy, and

other chemotherapeutic agents. Recent experiences suggest that continuous administration of Thio-TEPA postoperatively in mammary cancer may delay the emergence of inapparent disease.

*Busulfan* (Myleran) is the current chemotherapeutic agent of choice in the treatment of chronic granulocytic leukemia. It is usually given in a dosage of 2 to 8 mg. per day. In general, patients who are specifically symptomatic with respect to their leukemic disease, or patients who have developed anemia because of their disease, are candidates for its use. 6-mercaptopurine is also of some value in these patients. Its major usefulness is in patients who are exhibiting refractoriness to alkylating agents and radiation therapy. Colcemid is of some value in patients who are resistant to other forms of therapy. The adrenal steroids are of little value in these patients, except in those who have bleeding tendencies associated with thrombocytopenia states or those with terminal blastic crises. In general, it should be remembered, however, that radiation therapy remains a reliable and often the preferred form of treatment for many patients with the chronic leukemias.

Patients with chronic lymphocytic leukemia are often quite responsive to *chlorambucil* (Leukeran) and to TEM. Chlorambucil is given in a dose of 4 to 8 mg. per day over periods of a few weeks, dependent upon response, with interspersed rest periods. TEM must be given in small doses, initially, inasmuch as the disease is often quite sensitive to this agent. A dosage of 2.5 mg. three times a week may prove adequate to control the disease. This, of course, need not be continued beyond three or four weeks in many patients. Both of these agents have the advantage of oral administration. Careful laboratory control of dosage is mandatory. The therapist should be particularly vigilant with respect to the possibility of thrombocytopenia. The latter may be overlooked in patients in whom the white blood count is not declining. If these patients develop hemolytic anemia, bleeding tendencies, or thrombocytopenia, they, too, should be given corticosteroids provided there is no absolute contraindication to their use. The antimetabolites are of no avail in these patients, except in those in

whom conversion to the acute form of the disease has occurred. In the latter situation the therapeutic approach is the same as that employed in patients in whom the disease is acute from the outset.

Radiation therapy should be considered the primary modality of choice in patients with Hodgkin's disease. The alkylating agents are useful in the patients in whom systemic symptoms are present, some patients who have become refractory to x-ray therapy, and in the patients in whom the disease is pursuing a fulminant course. In general, local manifestations should always be treated with radiation therapy. Patients with mild systemic manifestations may be treated with TEM or chlorambucil on an ambulant basis. Dominant areas of disease activity, even in patients with systemic manifestations, may be treated by local radiotherapy concomitant with chemotherapy, provided the combined effects of the two treatment approaches are respected. The only place for the adrenal steroids in the treatment of Hodgkin's disease is as a terminal palliative measure, or in the patients developing thrombocytopenia or secondary autoimmune hemolytic anemia. Patients with early disease have been treated with actinomycin. Actinomycin C (Saramycin) is given in a dosage of 0.1 to 0.4 mg. per day, intravenously, over a period of two to three weeks. Actinomycin D is given in a dosage of 0.015 mg. per kilogram, intravenously, over a period of about five days. These agents are highly toxic antibiotics capable of producing bone marrow depression with leukopenia and thrombocytopenia, alopecia, gastrointestinal lesions, and skin eruptions. It should be emphasized again that radiation therapy is the main therapeutic pillar in patients with Hodgkin's disease, although chemotherapeutic agents, when judiciously employed, yield unquestioned benefit to some of these patients.

*Uracil mustard* is one of the most recently introduced oral alkylating agents.<sup>10</sup> The mustard moiety has been attached with a pyrimidine precursor, uracil. The carrier group is believed to be broken off in an intracellular position where the nucleic acid turnover is high. This agent has been tried in a wide variety of malignant disorders, but has been found most useful in the treat-



ment of the lymphomas and chronic leukemias. A study by Shanbrom and associates<sup>10</sup> disclosed that it was uniformly well tolerated, and that this agent might be of some value when other alkylating agents have failed. Therapy is usually initiated with a dosage of 1 to 2 mg. per day until clinical response occurs or until leukopenia intervenes. After this, therapy is suspended for two to three weeks after which it is resumed for about three weeks out of each month. Shanbrom and associates found uracil mustard uniformly effective in patients with "chronic lymphocytic leukemia, lymphosarcoma, giant follicular lymphoma, and mycosis fungoides." Patients with chronic granulocytic leukemia and polycythemia vera seemed to respond as well to uracil mustard as to any other alkylating agent. Only a few patients with solid tumors exhibit a response. The best responses among these patients were noted in those with ovarian carcinoma. This agent is not yet generally available.

In general, patients with lymphosarcoma are treated very much as patients with Hodgkin's disease, although there is less uniformity in response. Patients with lymphocytic lymphosarcoma exhibit the best responses, although it should be remembered that the prognosis, in general, even without treatment, is better in this group of patients. Patients with reticulum cell sarcoma and mycosis fungoides (usually considered a variant of reticulum cell sarcoma) are relatively resistant to the alkylating agents. Patients with lymphoblastic lymphosarcoma usually exhibit an intermediate response. Here again the corticosteroids have a place, particularly in those patients with thrombocytopenia states, bleeding tendencies, or hemolytic anemia.

Cytosan is the most recently introduced alkylating agent. Its spectrum of activity is somewhat similar to that of nitrogen mustard. Two major advantages are that it can be given orally and that it is not a vesicant. It can also be given intravenously, intramuscularly, intraperitoneally, and intrapleurally. Alopecia occurs in about 25% of patients, but the hair growth usually returns after discontinuance of the drug. Other side effects are granulocytopenia, thrombocytopenia, nausea, and vomiting.

Nausea and vomiting, in my experience, have been less frequent than with nitrogen mustard. As with other alkylating agents, some degree of leukopenia must be accepted if therapeutic effects are to be expected. Dosage is quite variable and is predicated on established sensitivity of the lesion, therapeutic response, and hematopoietic depression. It is being used in fairly large doses in anaplastic carcinomas and other solid tumors.

#### Summary and Conclusions

The use of antimetabolites and alkylating agents in the treatment of malignant disorders is discussed. The need for careful vigilance on the part of the therapist is emphasized. One should always be sure that the patient is beyond cure by surgical and radiologic methods before submitting the patient to the use of chemotherapeutic agents. The use of these agents in the treatment of solid tumors is discussed. The discriminate, judicious, and cautious use of these agents will provide some degree of palliation in a fair number of patients. It should be remembered that it is often necessary to induce and maintain some degree of leukopenia in order to obtain favorable therapeutic response.

#### References

1. Gellhorn, A.: Cancer Chemotherapy, Bull. New York Acad. Med. 31:750, 1956.
2. Karnofsky, David A.: Chemotherapy of Cancer, Mod. Med. 26:83, 1958.
3. MacDonald, Jan, and Yetha, Maurice: Medical Treatment of Cancer. M. Clinics of North America 43:971, 1959.
4. Wright J. C., et al.: Investigation of the Relations Between Clinical and Tissue-Culture Response to Chemotherapeutic Agents on Human Cancer, New England J. Med. 257:1207, 1957.
5. Wright, J. C., et al.: The Effect of Triethylene Thiophosphoramide on Fifty Patients with Incurable Neoplastic Disease, Cancer 10:239, 1957.
6. Hertz, et al.: Chemotherapy of Choriocarcinoma and Related Trophoblastic Tumors in Women, J.A.M.A. 168:845, 1958.
7. Hurley, John D., and Ellison, Edwin H.: Chemotherapy of Solid Cancer Arising from the Gastrointestinal Tract, Ann. Surg. 152:568, 1960.
8. Hurley, J. D., Ellison, E. H., and Riech, John: Chemotherapy of Solid Carcinoma. J.A.M.A. 174: 1696, 1960.
9. Deren, T. L., and Wilson, Wm. L.: Use of 5-Fluorouracil in Treatment of Bladder Carcinoma, J. Urol. 83:390, 1960.
10. Shanbrom, Edward, et al.: Uracil Mustard, A New Antitumor Agent, J.A.M.A. 174:1702, 1960.

# Electromagnetic Apparatus for Achilles Reflex Recording\*

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Having recently become interested in using the Achilles reflex time as a method of determining thyroid activity, an attempt to locate suitable apparatus locally was unsuccessful. The apparatus to be described was fabricated, and when used with a standard electrocardiograph machine serves the purpose of timing the Achilles reflex very nicely.

The clinical investigation of using the Achilles reflex as a means of determining thyroid activity was reported by Dr. W. C. Chaney in the *Journal of the American Medical Association* (June 21, 1924) and by others more recently. The purpose of this article is not to discuss the clinical merit of this test as compared to the protein-bound iodine or basal metabolism determinations, but to describe the apparatus used in conducting the test. It is hoped that by providing the means of procuring a simple and inexpensive accessory to a standard electrocardiograph machine the use of this test will be increased and make more clinical data available for further evaluation of its merits. I have used this mechanism sufficiently to prove that it is dependable and that it will give consistent results. The apparatus consists of a laminated iron core solenoid coil of approximately 5000 ohms impedance. The ends of the winding are connected to a standard electrocardiograph machine. The Lead I connections were used and connected so as to have the main deflection upward. Suitable jacks may be used and incorporated into the finished apparatus to facilitate quick and positive connection.

The reflex recording mechanism is constructed by obtaining a laminated silicon iron core  $\frac{3}{8}$  by  $\frac{3}{8}$  by 2 inches in size. The core is then covered by suitable insulating material. A preformed bobbin of fiber would be desirable, but if not available insulating paper or tape may be used. The

coil consisting of 1800 turns of size 36 or 38 AWG former magnetic wire is then wound on the form in layers. A small metal turning lathe or hand turned drill with a counting mechanism will assist in the easy completion of the task. A flexible lead is then soldered to each end of the winding and connected to suitable jacks for direct connection of the Lead I terminals of the electrocardiograph machine.

For those who do not care to wind coils and will settle for a moderate increase in size of the finished product, the primary winding of a 5000 ohm three to five watt audio transformer obtainable at any radio store will serve the purpose very nicely. The E-shape iron core is removed and also the secondary winding. The central opening of the coil is then filled with a straight laminated core as described above.

The apparatus is completed by placing it in a case of non-magnetic material. The method here chosen was to construct a case of  $1\frac{1}{4}$  inch aluminum tubing 3 inches long. One opening was closed by a tight fitting plug made of  $\frac{1}{4}$  inch aluminum; the other was closed by a similar plug of plexiglass which has three holes drilled in it. Two of the openings accommodate the jacks which have been described, the third is used to fasten the recorder to a stand or support. We used a  $\frac{1}{4}$  inch rod 5 inches long with a strong magnet attached to the other end.

*Clinical Use.* At the time of using the instrument, the magnet is attached to a steel topped stool which provides a solid base at the correct height. (Fig. 1.)

The patient is placed in a kneeling position in an adjoining soft cushion chair. The remaining item of the recording mechanism is a cylindrical alnico magnet  $\frac{1}{4}$  by 1 inch. One end of this magnet is placed in a tight fitting washer  $\frac{3}{4}$  inch in diameter. This washer is taped to the patient's heel. The distance between the alnico magnet and re-





FIG. 1

**HEMATOCRIT, BLOOD VISCOSITY AND MYOCARDIAL INFARCTION.** Burch, George E. and DePasquale, Nicholas P. *Am. J. Med.* 32:161, 1962.

During the past few years, physicists and engineers have made important contributions to a better understanding of the rheologic properties of the various body fluids. Surprisingly little attention has been given to rheologic phenomena by clinicians or by those engaged in cardiovascular research. However, a recent editorial in this *Journal* indicated the importance of rheology and its likely future contributions to medicine. The rheology of blood in diseased man is virtually unexplored. Yet, if it is remembered that a man may die of an acute myocardial infarction or of a cerebral vascular accident without demonstrable thrombus in a coronary or cerebral artery at autopsy, the importance of the "rheology of blood which refuses to flow" becomes obvious.

It has been observed previously that many patients with myocardial infarction or with angina pectoris and ischemic heart disease have erythrocytosis; furthermore, the condition of most, if not all of these patients with erythrocytosis and angina pectoris, improved after phlebotomy. Impressions formed over a period of years suggest that hematocrit values in patients with myocardial infarction tend to be higher than in normal subjects. It has been observed that, in general, coronary thrombosis is less common in patients with anemia than in patients with polycythemia vera. The influence of hematocrit on blood viscosity is considered by most physicians to be relatively unimportant until the hematocrit reaches a value well above 50 volumes per cent. This opinion is based on data, widely published in text-books of physiology and medical reviews, which indicate that the curve of viscosity rises gradually with the hematocrit until the hematocrit value exceeds 50, and then rises more sharply. This requires special consideration when applied to whole blood. It has been pointed out that the same blood has different viscosities in blood vessels of different diameters and types. The linear velocity of flow would be expected to decrease proximal to an area of narrowing in diseased coronary arteries. In segments with slow

rates of blood flow, blood viscosity would increase. Thus, in patients with coronary arteriosclerosis, the viscosity of blood with a hematocrit value of 50 volumes per cent may be low in the aorta but high proximal to a narrowed segment of a coronary vessel. The significantly higher incidence of myocardial infarction in patients with erythrocytosis must be explained in part by this fact. Anemia, on the other hand, would tend to provide a margin of safety, since at a given rate of shear, the blood viscosity is directly related to the hematocrit.

**Summary.** This accessory for use with an electrocardiograph machine as described is quite easily made, is inexpensive and fool-proof in operation. We would like to see this test performed more widely, so a more complete evaluation could be made of the function of thyroid activity as related to the Achilles reflex.

Many problems regarding the etiologic role of erythrocytosis in coronary thrombosis need investigation. Psychic stress apparently is followed by a marked and sudden increase in the hematocrit. It may be postulated, for example, that psychic stress is associated with changes in renal blood flow, an increase in erythropoietin production and, in turn, an increase in erythropoiesis.

The extent to which erythrocyte concentration influences blood viscosity *in vivo* and, in turn, how blood viscosity influences the rate of blood flow in various segments of normal and diseased blood vessels are questions which require further study. The heart must work to maintain blood flow throughout the circulatory system. The amount of cardiac work necessary to maintain blood flow through pathologically narrowed vessels must be influenced by the viscosity of the blood.

The coronary arterial circulation is peculiar in that the greatest blood flow occurs during diastole when the pressure head is low and progressively declining. When blood viscosity is high, this relatively low pressure head could become critical. This could explain instances in which myocardial infarction is found at necropsy in the absence of occlusion of a coronary artery. Likewise, it might predispose to thrombosis in diseased arteries, especially in the vicinity of narrowed segments.

Apparently, many factors are responsible for coronary thrombosis and myocardial infarction, and it appears that erythrocytosis and blood viscosity are important ones. (Abstracted for the Middle Tennessee Heart Association by Howard R. Foreman, M.D., Nashville.)

## CLINICAL NOTES FROM THE TENNESSEE HEART ASSOCIATION

### PHEOCHROMOCYTOMA:

#### A Curable Cause of Hypertension\*

E. CONVERSE PEIRCE, II, M.D.  
Knoxville, Tenn.

Although newer and more potent anti-hypertensive drugs permit better control of high blood pressure, not all patients respond adequately and all must have prolonged close supervision since drugs are not curative. Fortunately, over the years an increasing number of patients have been found to have some definite cause for their hypertension such as coarctation of the aorta, unilateral renal disease, or pheochromocytoma. Many of these patients have been treated successfully with surgery. Therefore, it has become increasingly important to study all hypertensives intensively to see if they may not fall into one of these favorable groups. None have yielded so dramatically to systematic investigation and treatment as have those with pheochromocytoma.

The pheochromocytoma, a generally benign tumor of the adrenal medulla or sympathetic ganglia, has been found in all age groups. Its most obvious manifestation is sustained or paroxysmal hypertension which is generally hard to control with drugs, but there are frequently important metabolic abnormalities also. Two hormones, epinephrine and norepinephrine (catechol amines) may be produced. These are closely related chemically and biologically and have similar synthetic pathways from the precursor phenylalanine. Principal effects are either metabolic or vasomotor. Epinephrine is 20 to 100 times more active metabolically, and patients with tumors producing large amounts of epinephrine are especially prone to develop refractory diabetes. Norepinephrine is the more potent vasoconstrictor and tumors producing high norepinephrine levels are more likely to cause severe hypertension, angina pectoris, and myocardial failure. Cardiac deaths may result from pheochro-

mocytoma even in children. In some patients, the motility of the smooth muscle of the gastrointestinal and urinary tracts is disturbed.

The presence of a pheochromocytoma should be suspected in all hypertensive patients, and with diligence will be found in about 2 percent.<sup>2</sup> Since even in paroxysmal cases there is a continual elevation of the levels of catechol amines, and since 70% of the end products of the metabolism of catechol amines are found in the urine, analysis of free and conjugated epinephrine and norepinephrine in the urine will disclose with great accuracy a pheochromocytoma if one is present. The various blocking and provocative tests should be discontinued because they too often yield equivocal results and some are dangerous while others are expensive. Levels of urinary catechol amines also give a clue to location of the tumor. Tumors of the adrenal medulla, with rare exceptions, produce both epinephrine and norepinephrine, while pheochromocytomas arising in sympathetic ganglia are of the pure norepinephrine type. The urine may be screened by a simple colorimetric assay, and in doubtful cases bioassay (cat's blood pressure or fowl cecal motility) may also be employed. Results are not plagued by the problems of interpretation inherent in the older tests, since urinary levels are consistently elevated when a pheochromocytoma is present. This subject has been ably discussed recently by Goodall and Stone.<sup>2</sup>

Preoperative localization of the tumor is advisable because it greatly simplifies the operative approach. Rarely a tumor is palpable or palpation will provide localization by producing a paroxysmal increase in the blood pressure. Although tumors may be quite small, arteriography frequently provides a satisfactory means of localization, and is even more effective when used in conjunction with paracoccygeal retroperitoneal insufflation gas.<sup>2</sup> If localization has not been possible, a relatively difficult transabdominal exploratory approach is required.

When a pheochromocytoma is removed, a norepinephrine drip must be started immediately to avoid dangerous or fatal hypo-

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tension. Administration may sometimes be discontinued in a few hours, but occasionally norepinephrine is required for several days, emphasizing that pheochromocytomas cause a high sustained level of catechol amines. Since manipulation may produce severe hypertensive paroxysms, a blocking drug such as bensodioxane should be available also in the operating room.

### Case Reports

*Case 1.* A. S., a 43 year old white woman had been known to have severe hypertension for 12 years and diabetes for 18 months. She had frequent "nervous" flushing and tachycardia, and had been sick for so long that she was severely depressed and mentally prepared for early death. There had been little or no response to the usual antihypertensive measures. The twenty-four hour output of urinary catechol amines was found to be as high as 1500 micrograms, predominantly norepinephrine. A arteriogram by percutaneous catheter revealed a definite right suprarenal tumor which was subsequently easily removed through a right retroperitoneal approach via the bed of the 11th rib (Fig. 1.) The tumor weighed

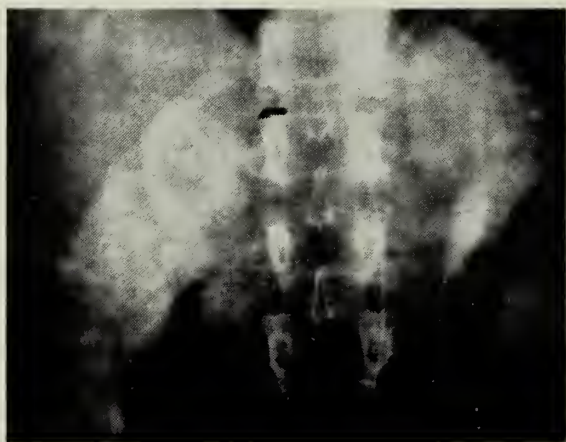


FIG. 1. Large right suprarenal pheochromocytoma localized by arteriography. Nephrographic phase.

60 Gm. A norepinephrine (Levophed) drip was required for only two hours. Postoperative studies of urinary catechol amines were normal. All

of her preoperative symptoms have disappeared and her mental outlook is optimistic.

*Case 2.* C. T., a 61 year old white man had hypertension, angina pectoris, and myocardial failure; diabetes had been present probably for many years. Hypertensive paroxysms as high as 270/140 were generally associated with angina. There had been a mild stroke without significant residual, a definite coronary occlusion, and progressive myocardial failure. Response to antihypertensive drugs, digitalis, and diuretics was unsatisfactory. The diabetes required insulin and was marked by rapid wide blood sugar changes preventing satisfactory regulation. Severe constipation was suggestive of megacolon and there were symptoms of urinary obstruction despite the absence of prostatic disease. Studies of the urinary catechol amines showed marked elevation of epinephrine and norepinephrine and an unequivocal diagnosis of pheochromocytoma of adrenal medullary origin was possible. Arteriography demonstrated that the tumor lay above the left kidney, thus permitting simple retroperitoneal excision as in the first case. The blood pressure immediately dropped from 220 to 90 systolic despite a norepinephrine and epinephrine drip and these drugs were required for about 24 hours. Postoperatively blood pressure and blood sugar levels became normal. All nervous symptoms disappeared as did the constipation and urinary hesitancy. There have been no more anginal attacks or episodes of myocardial failure. It has been possible to discontinue all medications and the patient now enjoys normal activity.

These cases are quite typical and highlight the fact that pheochromocytoma is a readily diagnosable and curable cause of severe hypertension.

### References

1. Goodwin, W. E., Moore, E. V., and Peirce, E. C., II: Roentgenographic Visualization of Adrenal Glands: Use of Aortography and/or Retroperitoneal Pneumography to Visualize Adrenal Glands: "Combined Adrenalography." *J. Urol.* 74:231, 1955.
2. Goodall, McC. and Stone, C.: Adrenaline and Noradrenaline Producing Tumors of the Adrenal Medulla and Sympathetic Nerves, *Ann. Surg.* 151: 391, 1960.

## STAFF CONFERENCE

### Vanderbilt University Hospital\*

#### A Problem in Childhood Psychiatry

In March 1961 a residential center for treatment of seriously emotionally ill children was opened in Nashville as a cooperative venture of Vanderbilt University Departments of Psychiatry and Pediatrics, Vanderbilt University Hospital, the State Departments of Mental Health and Education, and the Nashville City School System.

The following case conference is presented more as an illustrative sample of cooperative interdisciplinary treatment than it is as an example of an unusual patient. The problems which this patient presents are far from rare. She is an eight year old girl, (Vanderbilt University Hospital No. 260803, whom we shall call Francine P.), referred to this unit from the Mental Health Clinic in her local community. The reason for her referral was related to her inability to attend school because of infantile behavior and apparent mental deficiency.

#### Pediatric Summary

DR. ERWIN JONES: This was the second Vanderbilt University Hospital admission of this 8 year old girl. The first admission was on the Pediatric Service for 4 days in 1956, at which time a diagnosis of *Mental Deficiency and Personality Pattern Disorder* was made.

Francine was the product of a full-term normal pregnancy, labor and delivery. Despite the fact that she had cleft palate she cried and breathed spontaneously. Her birth weight was 5 pounds, 4 ounces. She fed poorly in the first few weeks, but gained well with prolonged feeding. She took solids at the usual age with difficulty. Her present weight is about 60 pounds. She sat alone at 5 months, crawled at eight or nine months, pulled up at 10 months, walked at 16 months. The cleft palate was repaired at the age of 14 months, and she was talking by two and a half years. She was toilet trained at 4 years of age. There was a history of constipation until the age of three and a half or four years. She has had two or three episodes of frequency, one associated with pyuria.

Her physical examination was consistent with what might be expected in a normal 8 year old girl, except for a Grade I, soft, short, blowing systolic murmur at the base. Because of the pres-

ence of muscle hypotonia and rather widely spaced eyes the patient was studied for cranio-cleido-dysostosis. X-ray films of the skull, clavicles, and pelvis were within normal limits. Routine laboratory work was within normal limits. Intradermal tests for histoplasmosis and O.T. were negative.

#### Social History

MISS MIRIAM McHANEY: Mrs. P. is a pleasant woman in her early forties who talks easily with the interviewer. She tells of problems with Francine since birth. She was born with a cleft palate and was a constant feeding problem. Accompanying this condition were severe throat and nasal infections until operation for correction of the cleft palate was performed at the age of fourteen months. After operation there was not only separation from the mother but the patient's arms were restrained for about three weeks. At the time of this operation the father developed a frank psychosis of a manic-depressive nature. In the following years he had quite frequent manic episodes followed by serious depressions, necessitating frequent hospitalizations. Though the marriage had not been a happy one even before Francine's birth, the father's illness caused the situation to deteriorate until it became intolerable for her, the patient and her brother who is three years older, and mother and father separated about three years ago. The mother feels that Francine's father has never been able to give warmth or had any understanding of his children's emotional needs.

The mother, who appears to be a capable, competent person, has been able to keep the home together and to give her children some emotional support and understanding. However, it would appear that this may have been at considerable cost to her own emotional economy as she describes herself as having an unhappy, insecure background. She states, "I just never knew how it was to feel a child."

Serious emotional problems became evident in the patient at about the age of two when she became negativistic, extremely withdrawn, living almost completely in her world of fantasy and became extremely dependent on the mother, much like an infant. At the time of admission to our hospital on April 4, 1961, she was unable to dress her-

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self, tend to her bodily needs and needed feeding assistance. For many years the mother and child had become virtually prisoners in their home as the patient was so regressed, so disturbed, and with so little control in social situations, she could not be taken to visit neighbors, ride in any kind of conveyance, or tolerate even a family picnic in the backyard without developing what seemed to be overwhelming anxiety.

#### Summary of Psychological Evaluation

MRS. PATRICIA ROEHM: The patient was tested by Dr. Virginia Kirk at the age of three years, seven months. At that time, her adaptive and motor behaviors were characteristic of a child of two years, six months. However, language behavior was at a two-year level, and this lag in language development was attributed by Dr. Kirk to emotional factors which produced language confusion, jargon, and echolalia.

When Francine was seven years old, she was seen by a psychologist in her home town. Due to her lack of cooperation in the testing situation, he was unable to obtain more than an estimate of her level of functioning intelligence. At that time he considered her performance to be approximately that of a four to five year old youngster.

Psychological evaluation studies done at this hospital in July 1961 and October 1961 indicated that Francine showed confusion of ideation and flight of ideas, but not the emptiness expected of mental retardation. Intellectual capacity cannot, as yet, be determined in this psychotic child. However, her word usage in fantasy productions is appropriate for her age level. In response to projective material, she showed denial of all things feminine, indicating a major problem with sexual identification. Her defenses are obsessive-compulsive in nature and when they fail, she resorts to a kind of flight of ideas in order to comment on, and thereby attempt to control the environment. It was felt that psychological examination was indicative of a severe psychotic illness of schizophrenic nature.

#### Summary of Nursing Care

MRS. NANNIE HOWARD: The patient was admitted to the division in April, 1961.

She was dressed in pedal pushers and with them she wore a boy's tee shirt and boy's shoes. Her hair was cut very short. She was tearful and very curious about the physical surroundings as she proceeded to examine the walks, floors, airvents, etc. Her mother had told Francine that she was going to a school, "because she dislikes hospitals."

In response to the staff's solicitous attention Francine would frequently say, "go away fools, you're all fools." When first admitted she ate only large amounts of salt and butter; later, when she would eat, she would put her mouth directly into the plate. She sat with both feet propped up in her chair with her legs spread apart. No mention was ever made to her of her strange eating habits.

The patient had many problems around toileting and needed assistance. She would sit for long periods in a bizarre position on the commode so as to be able to watch herself have a bowel movement. She would refuse to flush the toilet stating that she was afraid. The patient at present goes to the bathroom unassisted. In addition, when she was first admitted, she preferred to go barefoot. Constant acceptance has been very helpful, and Francine is seldom barefoot at the present time.

Francine masturbated freely and openly and would often refuse to put on her underpants. She refused to bathe when first admitted and would not let the nurses shampoo her hair. Bubble bath and toys were used to help make the bath more attractive. At present, the patient bathes often and will often say, "I want to take a bath because we have to look after our bodies." Trips to the Beauty Shop with glitter sprinkled on her hair after the set, made having a shampoo very attractive for Francine and at present she goes regularly to the Beauty Shop.

Francine was withdrawn at first and played alone. Now she still loves books and knows several stories from memory and sits for long periods "reading." She enjoys records and will often ask the nurses to play them. She is constantly encouraged to join in group activity and enjoys it for short periods. Although she enjoys outside activity and looks forward to the weekly pic-

tics, playtime in the parks, trips to the Children's Museum and walks, she often worries about getting back to the division and will say, "are we going back? I am ready to go back."

The patient still has many fears and it is often necessary for a nurse to sit with her at bed-time. A bed-time story frequently helps her to relax.

#### Play Therapy

DR. MURRAY FELDBERG: Francine spent the first few hours of play therapy exploring the room and equipment. However, she settled finally on playing with the doll house and has never really shifted her attention from the doll house to other activities in the playroom. Initially, she was greatly preoccupied with having things in the doll house arranged in a very neat and orderly fashion. It was during this time that she showed a good deal of compulsiveness on the division and would engage in ritualistically cleaning the living area on the division and washing the kitchen utensils. Rather soon thereafter it became apparent that she was dealing with the dolls in the doll house in much the same manner as she thought the nurses and physicians should be dealing with the children on the division. Concomitant with this she showed many signs of identification with the nursing personnel during the time outside of play therapy. She was quite interested in playing at making out the nursing schedule, the activities schedule for the children on the division, and even playing at giving medications both to the dolls she kept on the division, to the other children, and probably most important, to the personnel, including the physician. Much of her pre-occupation with fantasy material displayed during this initial phase was in the nature of "reversal of roles," and it was during this period that the patient showed the dramatic improvement described in the nursing notes. However, it was apparent that the child had simply consolidated her obsessive-compulsive mechanisms, and it was our hope that further therapy would aid in replacing these mechanisms with a mode of adjustment on a higher level. Several weeks later, on returning from a visit at home, the patient began to express resentment at going to play therapy and a

significant worsening of her behavior on the division occurred with a re-emergence of her conflicts concerning elimination. It was shortly thereafter that the patient again volunteered to return to play therapy. This time there was little or no evidence of compulsive orderliness. Since that time the patient has shown dramatic changes in her level of adjustment. At times she is extremely withdrawn, at other times quite outgoing. Although her behavior in general is more disturbed on the division a true splitting has now occurred with extremely good adjustment to the school.

#### Summary of Division School Program

DR. JOHN PATE: An important dimension of Francine's treatment program is provided at the Wills Center School. Attending school is a culturally prescribed activity for children, and the ego building potential inherent in the teaching process is well established. For these reasons, the Wills Center School is an integral part of the Division program. Francine's teacher at the school is specially trained to teach emotionally disturbed children and participate in planning and evaluating the treatment program. The teacher had met Francine and studied her case history before Francine was considered at staff conference.

When first admitted to the division, Francine spent much of her time sprawled grotesquely on the floor, openly masturbating. She evidenced little functional speech and related poorly with people. She reacted violently to change and required an extensive period to develop tolerance for the short bus ride to the school. As she became accustomed to the bus ride, Francine began to make brief visits in the school building until finally entering into school activities.

Francine proved to be a challenging pupil. Socially she was arrested at an early stage and seldom evidenced participatory play. On social, intellectual, perceptual, or coordination measurement scales, her performance was scattered and inconsistent. At times she demonstrated remarkable rote memory and frequently added nonsense syllables to memorized passages. Her behavior pattern included many elements considered normal for two and a half and three year old children. Specifically, she enjoyed making certain sound sequences and would



repeat particular phonations and words over and over out of context, viz., "poly unsaturated." Negativism, tantrums, masturbation, and lack of tolerance for transition characterized her behavior.

Francine and her teacher quickly established healthy rapport. Obsessional tasks involving peg boards, paper cutting, and puzzles were provided for her. She was encouraged in participatory play with the other children directed primarily toward de-individuation. Temper tantrums and physical attacks diminished in number and intensity. Her behavioral repertoire grew richer and more flexible, enabling her to engage in even more ego strengthening activities. Her teacher developed activities to encourage cognition and response to visual and auditory cues. She helped Francine become alert to areas in the physical environment. Then Francine began to respond favorably to reading readiness activities, including left-to-right scanning patterns, associating sounds with objects and colors with words, and discrimination of printed configurations.

After several weeks in the school situation, Francine moved into a dishwashing-tidiness behavior complex. She insisted on washing all art and craft materials and, in her play world, prepared snacks which she served her classmates. This behavior pattern was exhaustingly difficult to assuage and the teacher attempted to re-direct her behavior. Other class members were, at that time, cutting out illustrations from magazines to make word and color charts, so Francine was encouraged to join with them. But her perseveration of response, such as insisting that all colors were red or that all forms were apples, posed a whole host of new problems. The teacher then experimented with tactual-kinesthetic learning schemata. Within this framework, Francine was presented with sandpaper forms and letters, she was encouraged to draw in loose sand; she was provided with many opportunities to tactually experience form and configuration. Meanwhile, Francine was becoming more adept at using scissors. So much of her school time was consumed in cutting out pictures that a lay volunteer remained with her during the periods of activity with the scissors. It is

interesting to note that a majority of the illustrations chosen and cut out by Francine had food or mealtime as the focal content.

Relationship between Francine and her teacher constituted the primary strength of school experiences. By supporting healthy defense patterns, the teacher was able to assist Francine in finding more acceptable ways of handling anxiety. Allaying anxiety, in turn, freed Francine to increase tolerance for delay in gratification and for frustration. She began to blossom socially as more conflict-free areas of her personality structure could be involved in learning experiences. Her play matured noticeably and her speech became more articulate.

Quite abruptly, Francine announced her desire to discontinue the periods of paper cutting with the volunteer—she wished to return to reading-readiness activities with her classmates. Her performance continued to be scattered and inconsistent and her attention span was short. But Francine had more to work with. Her personality seemed better organized. Indicative of the sudden growth in personality were her paintings which formerly were disjointed vertical lines of paint on the page—now the vertical lines were patterned and framed by horizontal lines or circles.

At school, Francine has developed better means of handling her hurt and her fears. Seldom does she regress to tantrums and masturbation. She has a healthy identification with an understanding and helpful adult. But socially and academically, she is still limited. As Francine begins to communicate more clearly through speech and play, the teacher will be able to design more meaningful learning experiences for her. Francine is slowly beginning to participate in situations where stories are made up and acted out. Free association and projective experiences of this nature will provide the teacher with valuable material to use in planning therapeutic education for Francine.

#### Discussion

DR. JAMES C. GAMMILL: There are many fascinating aspects of Francine's problem, some of which I will attempt to discuss briefly.

In this case of childhood schizophrenia, we see with particular clarity the interac-

tion of constitutional and environmental factors. Firstly, Francine was born with a cleft palate, which interfered with a normally enjoyable feeding experience and thus the primitive basis for the mother-infant relationship. As the father suffered from a manic-depressive psychosis, there may also have been some constitutional predisposition to psychosis. We learn, too, that Francine's mother had experienced a deficit in her own experience of being "mothered" as a child, in that she early lost her own mother, and was forced to take up physical and psychological tasks far beyond her years. As Francine's mother puts it so vividly, "I just never knew how it was to feel a child." Therefore, she could not give her own child the intuitive empathy, which is so important for establishing, at the earliest level, the infant's feeling of being loved, understood, and wanted. Also, during critical years of Francine's early life, her mother did not have the emotional support of the father—so important to mothers for meeting the emotional needs of their children.

Much of Francine's behavior on the ward and at school can be understood in terms of an attempt to express and solve her early feeding, communication, and basic trust problems. She was distrustful of ward personnel ("fools" who would give her the wrong kind of care); she put her mouth directly into her plate; she was withdrawn and preferred solitary play to risking social interaction.

Whenever children fail to receive a sense of basic security and trust in their earliest emotional relationship, we almost always find in later life an exaggerated need to control people and things around them. They must ensure that their food is clean and good, that they will not be persecuted, attacked or rejected, and that nothing strange, unexpected, or threatening comes their way. It appears quite likely that her hospitalization at age fourteen months was felt as a severe threat, during which Francine had to submit to others' control. Likewise, while on our ward, she reacted negatively to her visit home (arranged by doctor, social worker, and mother), and it took her quite some time to re-establish trust in Dr. Feldberg.

Psychoanalytic experience has taught us

that during the second year of life the child's anal function becomes the focus around which control by and of parental figures is worked out. The clinical material reveals vividly Francine's pre-occupation with her feces. Psychotic children are particularly fearful of losing parts of themselves, and their capacity to differentiate between fixed parts of the body, e.g., an arm or leg, and feces, or even the phantasy of a baby is often seriously disturbed. This leads to severe anxiety over the passage of stool or its being flushed down the toilet.

One element in the great need to control others is the fear of loss of control over their hatred and aggression, if the loved or needed person frustrates them. Connected with this is a fear of loss of control of their emotions and what sanity is still possessed. It is not surprising that a prime defense mechanism is "reversal of roles," in which the psychotic child in phantasy becomes the feeding mother, an omnipotent doctor, omniscient teacher, etc.,—and so free of frustration!

However, at the same time Francine, in another part of herself, sees herself as helpless and hopelessly confused. When so much has gone wrong in development, children often feel if they could only be someone else, all would be well. In little girls, like Francine, there is almost a delusional belief that being a boy would cure all their difficulties magically. In this connection, the overt, continuous masturbation is not primarily like that of the normal three to five year old, exploring his or her genitals and genital sensations with accompanying sexual phantasies. Rather it is more an attempt to escape a sense of global emptiness and despair, and to gain reassurance that there is bodily and emotional intactness and life.

It seems to me that therapy in the Center has been rationally directed, in keeping with the psychodynamics which I have discussed. Her physician, teacher, and nurses have allowed her to express her oral-fixated and regressed needs, and have encouraged the establishment of basic trust and confidence in a new edition of a mother-infant relationship. Her anal experiences and anxieties have been re-lived in an interpersonal context with the help of the nursing per-



sonnel. The positive aspects of her obsessiveness have been strengthened, in terms of encouragement of her realistic success in carrying out routine tasks. As anxiety and panic are diminished she can begin to learn, and there is less drive toward relief by resorting to psychotic phantasy and masturbation.

Although Francine has improved greatly, and it is difficult, seeing her now, to realize that only a few months ago the diagnosis of serious mental retardation was considered, she is far from well.

Her improvement is still highly contingent on the actual presence of the therapeutic milieu of the ward. The whole experi-

ence requires further working through before it can be sufficiently internalized to solidly strengthen her personality. Also, although her identifications are improved, they are still predominantly magical in quality and involve wholesale imitation of the adult rather than being a gradual, selective, integrative process. If there were a day care program and intensive long-term psychotherapy for children available in her community, she could be considered for discharge at this time. Otherwise, I feel, she will need at least a year or more of treatment here to make her clinical recovery reasonably secure.

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**Myelofibrosis. W. T. Meszaros and M. Sisson. Radiology—Vol. 77:958 (Dec.) 1961.**

Myelofibrosis, i.e., myelosclerosis with myeloid metaplasia, may be either (1) primary or idiopathic or (2) secondary to proliferative disease processes or to toxic agents, such as certain industrial solvents. The marrow is replaced by fibrous tissue, which may be patchy or diffuse. The bone trabeculae are thickened, and new bone formation occurs (myelosclerosis). A leukemoid blood picture is present, with immature white cells. Anemia is a usual finding. Radiologically, areas of increased bone density may be seen (30% to 50% of cases), as well as areas of decreased density, producing a mottled or moth-eaten appearance. Periosteal reaction is occasionally observed. Splenomegaly or hepatosplenomegaly is demonstrable. The primary and secondary forms of the disease are indistinguishable on the roentgenogram. Conditions to be differentiated from myelosclerosis are myeloid leukemia, sickle-cell anemia and Cooley's anemia, metastatic carcinoma, osteopetrosis, Paget's disease, fluorine osteosclerosis, and urticaria pigmentosa. Therapy is largely supportive. Duration of life is from months to several years. Three cases are reported, with illustrations of the radiolucent and sclerotic lesions.

## CLINICOPATHOLOGIC CONFERENCE

### Vanderbilt University Hospital\*

#### Gangrenous Cholecystitis

This was the first Vanderbilt University Hospital admission of this 54 year old white woman complaining of abdominal pain.

About 22 years before admission she had an episode of severe cramping upper abdominal pain with jaundice and pale stools lasting about 2 weeks. There were several similar attacks subsequently, the last being one year prior to admission, and some gaseous distention intermittently for many years.

The present illness began 4 to 5 days before admission with sudden onset of cramping mid-epigastric pain following eating watermelon. Pain persisted intermittently and was associated with nausea and vomiting one time. The next day she was better. The next night pain recurred in the epigastrium and radiated to the back and around both costal margins, especially the left side. At about that time she began to have RLQ pain also. For 3 days before admission she failed to void or pass a stool, despite a reportedly adequate fluid intake. Two days before hospitalization pruritis and jaundice were first noted. Temperature was elevated to 101° 2 days before admission. Chills were denied. Profuse sweating began the day of admission.

*System Review* revealed only some pedal edema for 10 to 15 years.

*Physical Examination.* T. 102°, P. 104, R. 24 and B.P. 68/52.

The patient was an obese white female who was stuporous and clinically in shock, with anxiety, ashen color and cold clammy skin. The skin and sclerae were icteric. There were excoriations of the skin. There was no lymphadenopathy. Head and its structures were normal, except for edentia. Neck was supple; thyroid was not felt. The chest was resonant throughout with good expansion and no rales. The heart was thought to be enlarged; sounds were faint, but a gallop rhythm was noted. P<sub>2</sub> was greater than A<sub>2</sub>. There was a soft blowing systolic murmur over the entire precordium. The abdomen was protuberant (obesity). There was moderate muscle spasm over the whole upper abdomen and tenderness in the epigastrium, both upper quadrants, CVA regions and suprapubically. No masses or organs were felt; there was no sign of free fluid. Pelvic and rectal examinations were deferred. There was slight pretibial and sacral edema. Reflexes were equal and hypoactive.

#### Laboratory Data:

Urine: deep orange, 2+ albumin, trace sugar, bile test was positive  
1-2 WBC/hpf. occasional RBC

WBC. = 33,500 85% segs. hypochromic RBC  
Hgb. = 13.5 Gm. Icterus index = 30

Kahn—negative NPN—108 mg.%; blood sugar—196 mg.%

Chlorides—89 mEq/L Amylase—35 units

Stool—1+ bile

EKG. = sinus tachycardia and abnormal ST-T changes.

No x-rays were taken.

*Course:* The patient was given 500 cc. of plasma and 825 cc. of 20% glucose intravenously over an 18 hour period. Only a minute amount of urine was produced during that time. Her temperature went up to a peak of 105.8°. Oxygen and morphine gave no relief. The patient remained in shock and died 18 hours after admission.

DR. DAVID LAW: This seems a rather straight-forward and simple story—so much so that I am sure the obvious answer is not the correct one! Because of this, after the initial outline, I would like to draw together some assistance which the medical student group will volunteer. In reviewing the chart, we see that this is, in essence, the story of 22 years of intermittent upper abdominal pain initiated by an episode of jaundice and terminated by an episode of jaundice, pale stools, fever, hypotension, renal failure and extension of pain, all occurring in a white, obese, 54-year-old, gaseous mother of four.

The physical examination, although significant, added little as far as the differential diagnosis of her disease. She was icteric and in shock with a gallop rhythm. Her upper abdomen was diffusely tender with guarding and reflex spasm of the abdominal musculature.

In an attempt to make a science of medicine, there has been much interest in utilizing mathematics and mathematical techniques in the establishment of clinical diagnoses. Such can be done here, in a modified sense, by utilizing the formula F<sup>5</sup> = G.B.D. and to return to our history, we find we are dealing with a white (Fair), obese (Fat), 54 (Fiftyish), gaseous (Flatulent), mother of four (Fertile Female) and with the symptoms that she presents, I see little alternative to choosing gallbladder disease as her problem at the time she presented to us. Assuming, then, that this is a straight-forward case, and that this lady does have gallstones or gallbladder disease, what might have happened to her or to her gallbladder that could initiate her fatal five-

\*Vanderbilt University School of Medicine, Nashville, Tenn.



day illness? The students have been kind enough to provide me with a table of possibilities suggested by their perusal of the protocol and I believe it would be worthwhile to discuss this case in reference to the possibilities they submit.

The first complication is that of simple common duct stone. The second is the development of acute cholecystitis with gangrene, perforation of the gallbladder and septicemia. The third is the development of acute hemorrhagic pancreatitis secondary to biliary tract disease. The fourth is perforation of a gallstone into the bowel with a gallstone ileus and the last is the complication of a carcinoma of the gallbladder developing in a patient with chronic cholelithiasis. As we know, anywhere from 1 to 5 per cent of all gallbladder operations in major institutions find carcinoma of the gallbladder to be present.<sup>1</sup> This disease occurs most commonly in the sixth decade and approximately 75% of the patients are females, approximately 90% of them harboring gallstones. Although gallstones are not always found associated with gallbladder carcinoma, there seems little doubt that their long presence plays a role in the development of carcinoma in certain individuals. With a history dating back 22 years this must be considered as a possible terminal complication of long standing cholelithiasis in our case. Usually with these patients, terminal complaints progress over a more prolonged period of time than 5 days but they may, on occasion, present as an acute cholecystitis in an otherwise asymptomatic person. With these five possibilities in mind, we might discuss several of the historical, laboratory and clinical findings.

The first point I would like to mention is the presence and significance of severe cramping upper abdominal pain, which we are told, radiated to the back, around both costal margins and especially to the left side. The cramping pain suggests the complete or partial obstruction of a hollow viscus such as the common duct. Such distress could be caused either by stone or by carcinoma and the radiation of pain around both sides to the back suggests the pancreas as a possible source of trouble. It might be worthwhile noting that left-sided pain does

occur in gallbladder disease per se and as Smith<sup>2</sup> has pointed out, between a fourth and a fifth of the patients seen with gallbladder disease may have some evidence of left-sided pain. The incidence of left-sided pain is greatest in those patients who have an associated pancreatitis (41% of this group), but also may occur in patients who have common duct stones and those who have gallbladder disease with neither duct obstruction nor pancreatic involvement.

Thus, our patient's pain distribution suggests pancreatic involvement but does not necessitate our implicating this process. The occurrence of nausea and vomiting is compatible with most of the diagnoses we have mentioned as is the jaundice, pruritis and pale stools secondary to inflammation or obstruction of the common duct.

The other group of systemic symptoms, namely fever and shock, are much more compatible with the diagnoses of acute cholecystitis with perforation and septicemia, or pancreatitis than they are with simple common duct stone or with carcinoma. It seems highly suggestive that some suppurative process was taking place in the right upper quadrant with a white count elevation of 33,500, a temperature of 105.8° F. and a state of shock. A serum amylase of 35 units on the fifth day of her illness does not rule out pancreatitis and indeed is compatible with any of the diagnoses we have mentioned. The elevated amylase that one might expect to find in a patient with acute pancreatitis may revert to near normal levels over the course of 36 to 48 hours even though systemic manifestations of the attack of pancreatitis persist. Nevertheless, with no history suggesting chronic pancreatic inflammation and insufficiency, we might expect a higher serum amylase level if the pancreas was the primary seat of the disease at this time.

The most distressing feature in the entire protocol is the patient's failure to void over three days and her serum nonprotein nitrogen of 108 mg.% at the time of admission. The presence of albumin, white cells, red cells in the urine and the finding of only 10 cc. of urine in the bladder at catheterization might be explained in several ways. In a severely ill patient with nausea and vomiting for four days, a prerenal azotemia asso-

ciated with dehydration might account for some of these findings—to me, the more likely cause would be the so-called “shock kidney” or acute renal failure associated with a period of hypotension relating to vascular insufficiency or overwhelming infection. This certainly has been known to occur in gram-negative septicemia, the like of which might be associated with acute cholecystitis, gangrene and perforation of the gallbladder. Possibly less well recognized, but also well documented, is the association of acute renal failure with pancreatitis. Beisel et al. in 1959 described 5 patients with acute renal failure associated with acute pancreatitis.<sup>3</sup> These 5 patients were found amongst 32 patients whom he had seen with pancreatitis and 63 patients he had seen with acute renal failure. It is of note that the amylase values were normal in 2 of these people in spite of the commonly quoted dictum that acute renal failure may cause an elevated serum amylase even in the face of a normal pancreas.<sup>4</sup> It seems that such amylase elevations certainly may occur but the true incidence is, as yet, not definitely established. In order to be a clinical parsimonist and tie everything neatly together in one small C.P.C. bag, I would choose to say that the renal failure was on the basis of the acute complication of this patient's gallbladder disease. However, without adequate history of urinary tract findings over the preceding months or years and without previous history of blood pressure measurements, it is impossible to say whether or not her renal disease might have been a manifestation of some other systemic or local renal process.

Among the studies which might have given us additional valuable assistance are x-ray examinations of the abdomen, especially supine and upright films which could be taken at the bedside, and, if the patient's condition had permitted it, either oral or intravenous cholangiography in an attempt to delineate the status of the gallbladder and extrahepatic biliary tree. A great deal of information can occasionally be obtained from the plain film of the abdomen when dealing with disease of the gallbladder and pancreas. In 10 and 20% of patients with cholelithiasis, a radio-opaque stone may be noticed lying in the region of the biliary

tract or, in the case of gallstone ileus, lying within the lumen of the bowel. Radio-opaque milk of calcium bile occasionally may be noted, especially in individuals with obstruction of the cystic duct. Following perforation of the gallbladder and fistula formation to the bowel, air may be noted lying within the extra hepatic biliary tree. In addition to these findings, one may look for the so-called sentinel loops of dilated bowel lying adjacent to the inflamed pancreas and the rarer Popple's triad of dilated bowel loops encircling the inflamed pancreas. Pancreatic calcifications are an important sign of chronic pancreatic inflammation and the presence of disc atelectases, or even effusions in the pleural space may be noted during acute exacerbations. One other procedure of diagnostic significance, which could be performed at the bedside, is a peritoneal tap with a small bore needle and syringe. Examination of the peritoneal fluid for amylase, bacteria, protein, bile and blood can be carried out and many times one may obtain significant information from a small amount of fluid atraumatically collected.

But these data are not available and to settle with the information at hand, I must conclude that we are dealing with a long standing gallbladder disease problem in a woman who had an abdominal catastrophe related to one of the complications of cholelithiasis, most likely gangrene, perforation, peritonitis and septicemia but also possibly a common duct stone with secondary acute hemorrhagic pancreatitis, either of the above associated with acute renal failure. I might add that all of the possibilities mentioned suggest the advisability of surgical intervention although I presume the patient was not considered an adequate risk for exploratory laparotomy.

DR. JOHN B. THOMISON: The body was that of an icteric, markedly obese white female. Pertinent findings were limited essentially to the peritoneal cavity, which contained a small amount of very dark fluid in which numerous masses of fibrin were seen. The serosal surfaces were of a brownish-yellow color, and in many places the visceral and parietal layers were adherent due to the presence of fibrinous adhesions. The omentum was rather firmly



adherent to the abdominal wall in the right upper quadrant, and when it was removed was found to cover a rather large blood clot lying between the liver and the abdominal wall anteriorly and laterally. This hematoma was found to be continuous with a large accumulation of blood underneath the capsule of the liver, communicating through a 3.5 cm. rent in the capsule along the anterior attachment of the gallbladder. The gallbladder was found to be large, with a thick, edematous, somewhat hemorrhagic wall, in the posterior portion of which was a large perforation measuring about 4 by 6 cm., showing ragged, hemorrhagic edges. Extending laterally toward the right was a large hematoma, which was found to be continuous with the subcapsular hematoma of the liver. The gallbladder contained a single barrel-shaped cholesterol stone measuring 2 by 1.4 cm. in size. The mucosa was hemorrhagic and showed numerous areas of ulceration. The cystic duct was thought to be slightly larger than normal, but was patent throughout, and the common duct showed nothing remarkable. The cystic artery was followed out toward the anterior attachment of the gallbladder, where it entered the area previously occupied by hematoma. At about the level of the perforation of the gallbladder the cystic artery became necrotic and showed a rather large defect in its wall.

Microscopic sections of the cystic artery in the region of its perforation showed fibrinoid necrosis, with complete dissolution of the wall at the site of the perforation.

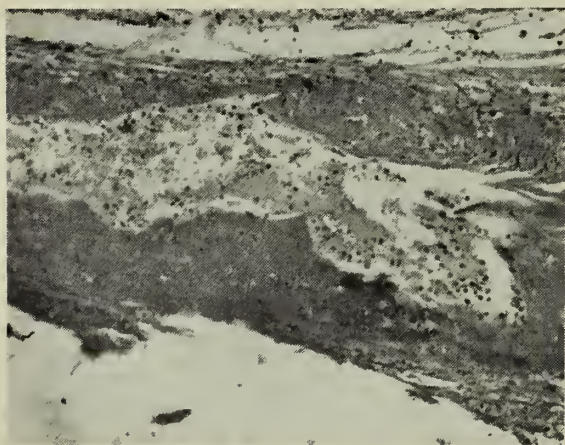


FIG. 1. Cystic artery at point of rupture. The wall is completely necrotic in the lower portion. (H & E. x 200.)

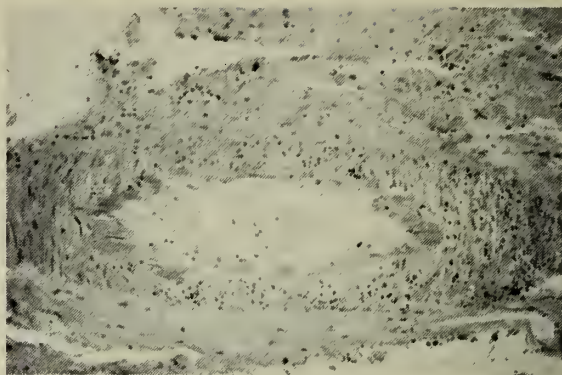


FIG. 2. Cystic artery proximal to point of rupture. Note fibrinoid smudging of intima, and neutrophilic infiltration of muscularis. The lumen is partially filled with thrombus. (H & E. x 200.)

Proximal to this area, varying degrees of necrosis, with polymorphonuclear infiltration, and with dissolution of the musculature, could be seen. Microscopic sections of the gallbladder showed a typical gangrenous cholecystitis. No evidence of bacterial infection was present in the sections, and indeed, no evidence of infection was found at all, since only a few scattered gram-negative rods, thought to be postmortem contaminants, were found in smears from the peritoneal cavity, and culture of the heart blood was negative at the end of two weeks.

Although no frankly necrotic vessels, with polymorphonuclear infiltrate, were found in other areas, several small arteries in the wall of the gastrointestinal tract, in the periadrenal fat, and in the kidney showed intimal thickening, with fibrinoid necrosis of the intima and muscularis, indicative of an acute arteritis. The renal glomeruli were extremely large and relatively bloodless, and showed a marked increase in cellularity. In a few areas, there was thickening and smudging of the basement membrane. A few glomeruli showed epithelial crescents of Bowman's capsule.

The findings are those of a disseminated acute arteritis, with an acute glomerulonephritis. This correlates well with the marked oliguria which the patient showed, and with the finding on microscopic examination of the urine of red blood cells and granular casts, as well as with a blood nonprotein nitrogen of 108 mg. per cent. It also resulted in rupture of the cystic artery, leading to the striking chain of events which occurred in

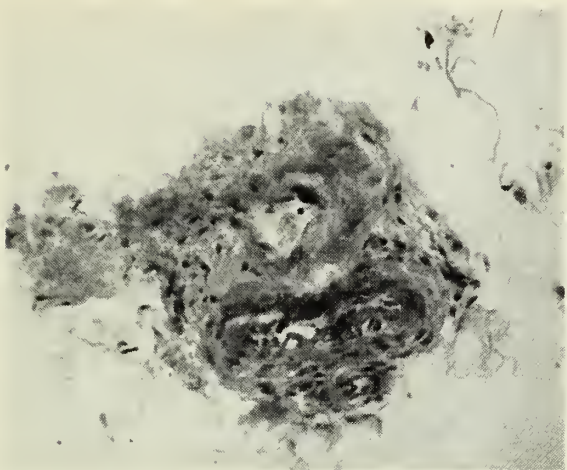


FIG. 3. Small arteries in renal pelvis. Note loss of structure of the wall in the upper artery, due to fibrinoid necrosis. (H & E. x 320.)

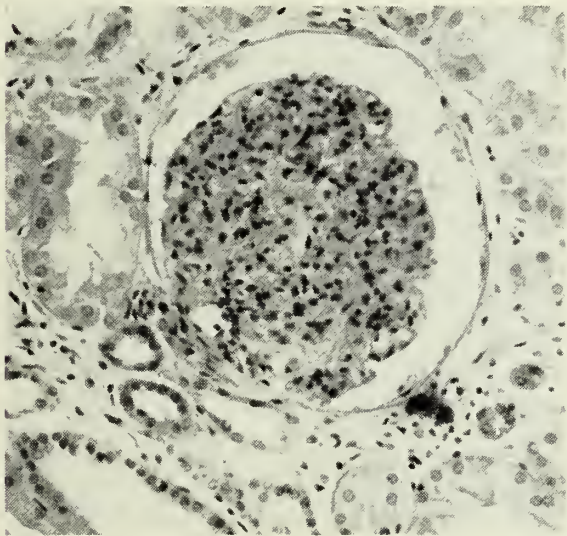


FIG. 4. Renal glomerulus. The glomerulus is very large and quite cellular. (H & E. x 320.)

the terminal course of the disease. The findings in the cystic artery and gallbladder are compatible with the five day history of progressive gallbladder symptoms which the patient showed. As I reconstruct the picture, the circulation of the gallbladder was compromised at or shortly prior to the onset of severe cramping, midepigastria pain five days prior to admission. Her gallbladder symptoms progressed until the time of admission, when she was extremely ill, in peripheral vascular collapse, and quite icteric. Actual rupture of the cystic artery would appear to have occurred at some time during this period, producing the large

hematoma which was present under the liver capsule, in the right upper quadrant of the abdominal cavity, and in the gallbladder itself. The marked icterus could be explained on the basis of increased breakdown of blood, superimposed on a liver already partially damaged by an early portal cirrhosis. This absorption of blood also likely contributed to the elevated NPN. Probably near the end of her course, her gallbladder perforated, leading to peripheral vascular collapse, bile peritonitis, and death.

What we have here, in essence, is a patient dying of gangrenous cholecystitis with perforation, which is the diagnosis that Dr. Law has made. The rather freakish series of events leading to this he did not, of course, diagnose, and it would seem to be most unreasonable to expect that he would. As a matter of fact, had we been unable to demonstrate vascular lesions elsewhere, we would have been on rather uncertain ground as to the etiology of the perforation of the cystic artery.

#### Final Diagnoses

1. Acute gangrenous cholecystitis, perforated, due to
2. Necrotizing arteritis of the cystic artery, with perforation, due to
3. Disseminated arteritis
4. Acute glomerulonephritis
5. Chronic cholecystitis and cholelithiasis
6. Portal cirrhosis, early
7. Subcapsular hematoma of the liver, secondary to (2)
8. Bile peritonitis, secondary to (1).

#### References

1. Gerst, P. H.: Primary Carcinoma of the Gall Bladder, *Ann. Surg.* 153:369, 1961.
2. Smith, Lucien: Left-sided Pain in Disease of the Gall Bladder, *Proc. Staff Meet. Mayo Clin.* 34:597, 1959.
3. Beisel, W. R., et al: Acute Renal Failure as a Complication of Acute Pancreatitis, *A.M.A. Arch. Int. Med.* 104:539, 1959.
4. Meroney, W. H. et al: Some Observations of the Behavior of Amylase in Relation to Acute Renal Insufficiency, *New England J. Med.* 255:315, 1956.



# President's Page



WILLIAM O. VAUGHAN,  
M.D.

The annual meeting of the Tennessee State Medical Association and the sessions of the House of Delegates will be held April 8-11, at the Peabody Hotel in Memphis. This is the most important session and the highlight of the Association's year. An excellent and varied scientific program has been planned.

The meetings of the House of Delegates will occur on Sunday afternoon, April 8th and Tuesday morning, April 10th. Reference Committees will meet on Monday, April 9th.

Many important problems face medicine and in my opinion, the responsibilities of the members of our House of Delegates were never stronger than at this time.

Our future plans must be carefully mapped. Among many others, we must forthrightly meet such problems as (1) health care of the aging; (2) political and legislative matters; (3) our dealings and liaison with allied health organizations; (4) the decision on the policy to be adopted by our Association on the relationship with osteopaths; and (5) the increasing ethical problems arising in our state.

Our Association is a large and complex organization and careful planning is necessary. Today's problems require far-sighted vision by all those attempting to find solutions. Anything less than the most considerate action will lead to additional problems.

A decision should be reached on what we will do in Tennessee about the American Medical Political Action Committee Program (AMPAC). The purpose is the same on the state level as it is on the national level. We need to learn more of the methods of good government. To accomplish this, we should have an organization (necessarily separate) through which we can inform ourselves on political issues and candidates at all levels.

Attendance at our annual meeting offers an opportunity to attend the House of Delegates, so that its actions can be better understood.

The scientific program will be a diversified one. To assist in planning the broad coverage of these endeavors, the Scientific Program Committee is cooperating with the various specialty societies to sponsor guest speakers in their particular fields. Panels and symposia are devoted to particular interests interspersed with individual presentations.

Your President has been concerned in recent years with the small attendance at the annual meeting, compared to our total membership. The Association's business is *YOUR* business. Every member will find something of personal and professional interest in the program of the scientific meeting and the business sessions.

A new scientific feature this year will be the presentation of Fireside Conferences. This activity is sponsored by the Tennessee State Medical Association and the Tennessee Chapter of the American College of Chest Physicians. The conferences will be conducted on Tuesday evening, April 10th in the Peabody Hotel.

In addition to the business and scientific presentations, several awards will be made at the President's Banquet along with a very interesting bit of entertainment.

Looking forward to seeing a large turnout of Tennessee Physicians in Memphis at the Annual Meeting. . . .

A handwritten signature in dark ink, reading "W. O. Vaughan". The signature is fluid and cursive, with a large, stylized "V" at the end.

President

# THE JOURNAL

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MARCH, 1962

## EDITORIAL

### CARCINOMA OF COLON AND RECTUM

Carcinoma of the colon and rectum is now the most common malignant tumor other than cancer of the skin. The importance of this type of neoplastic disease is revealed by the estimate that during 1961 in the United States there were 70,000 new cases of cancer of the colon and rectum as compared with 63,000 of the breast, 44,000 of the lung, 40,000 of the uterus, 31,000 of the prostate and 26,000 of the stomach. During the past decade, as the result of an excellent educational program by the American Cancer Society, attention has been directed to change in bowel habits and rectal bleeding as prime warning signs of internal cancer.

Welch and Burke<sup>1</sup> from the Massachusetts General Hospital have compiled statistics over an 11 year period and compared this with a similar 11 year study by Welch and Giddings reported in 1951.<sup>2</sup>

The length of time that cancer of the colon and rectum remains asymptomatic is unknown. Despite the fact that nearly two-thirds of all such cancers could be diagnosed at an early stage by rectal examination or sigmoidoscopy, it is remarkable how rarely this is done. A significant number of their patients who were asymptomatic on entry to the hospital were found to have cancer of the colon and rectum by physical examination, sigmoidoscopy or study by barium enema. The yield was greater in those who had blood in the stool, but persistently guaiac positive stools are not found invariably in cancer of the large bowel. Although this report emphasizes the need for well performed sigmoidoscopy and roentgenography of the large bowel, individual physicians' use of the examining finger must not be neglected.

One of the most heartening aspects of their report is the decrease in delay before treatment from an average of seven months to three months at the present time. Probably as a corollary of this there has been a higher rate of resectability with more patients presenting themselves without lymph node metastases.

The site of the tumor has not changed in the two reports. Sixty-nine percent were located in the rectum, sigmoid and anus and about 10% in the cecum.

The survival rate following surgery of the large bowel has improved when more extensive surgical procedures have been carried out. The cure rate for cancer of the ascending colon and cancer of the sigmoid treated by simple resection and anastomosis remains about the same in both reports whereas the cure rate for cancer of the transverse colon has improved. This has been attributed to the more extensive procedures now being carried out with cancer in this location. The use of nitrogen mustard chemotherapy and radiation in addition to surgery is suggested for certain cases.

Two diseases of the large bowel are sometimes associated with carcinoma. The first, ulcerative colitis, is now often treated by ileostomy and either subtotal or total colectomy. Since carcinoma seemed to develop in old, "burned-out" cases of ulcerative colitis, this type of operation has been a factor



in the improved outlook for such patients. The second, rectal polyps, still presents a problem to the surgeon attempting to treat these patients most effectively. Many patients do well with local excision, but the fact that local excision of a true cancer is undesirable has been emphasized by Ottenheimer<sup>3</sup> and others.

There has been a significant improvement in the more recently studied group of patients. The five year survival rate of the entire group has increased from 26% to 38%. In those who survived resections for cure, the five year survival rate increased from 45% to 58%.

Although there has been a dramatic improvement in results the authors suggest that a plateau may have been reached from which any further improvement will require radical changes in diagnosis or therapy. Let us hope such changes are not too far around the corner.

A. B. S.

#### References

1. Welch, C. E. and Burke, J. F.: Carcinoma of the Colon and Rectum, *New England J. Med.* 266: 211, 1962.
2. Welch, C. E. and Giddings, W. P.: Carcinoma of Colon and Rectum: Observations on Massachusetts General Hospital Cases, 1937-1948, *New England J. Med.* 244:859, 1951.
3. Ottenheimer, E. J. and Oughterson, A. W.: Observation of Cancer of Colon and Rectum in Connecticut: Analysis based on 5572 Proved Cases, *New England J. Med.* 252:561, 1955.



#### RALPH RYCHENER—PAST-PRESIDENT

Elsewhere in this issue appears the notice of Dr. Rychener's death. We could write of the attainments and accomplishments of many of our members upon the occasion of their death. But the choice of who should be so honored, and the time, and space in the *JOURNAL* make this impracticable.

On the other hand, we should be reminded of what manner of man we have honored with the presidency of our Association.

Ralph Rychener, a native of Ohio, received both his bachelor's and medical degrees from the University of Michigan. He was a member of Alpha Omega Alpha. He began his residency in ophthalmology at the University Hospital in Ann Arbor in 1924. (It was at this time that your Editor, as a

contemporary on the medical service, had the pleasure of first knowing Ralph.)

He entered practice in Memphis in 1926 and immediately took an active part in the teaching of ophthalmology at the U.T. College of Medicine; he held the title of Associate Professor in Ophthalmology since 1947. Dr. Rychener served as Chief of Staff of the Memphis Eye and Ear Hospital. He was certified by the American Board of Ophthalmology and was an associate examiner for the Board for over a decade.

Our Past-President took an active role in a number of medical societies. He had been president of the Memphis-Shelby County Medical Society, as well as a member of the Board of Trustees of T.S.M.A. He was the Association's 72nd president, 1960-61. For many years he took an active part in, and held official positions in the Memphis Society of Ophthalmology and Otolaryngology and of the Tennessee Academy of Ophthalmology and Otolaryngology. As a member of the American Academy of Ophthalmology and Otolaryngology he served as secretary, vice-president and as instructor. From 1956, he was Section Delegate for Ophthalmology to the A.M.A. House of Delegates. For many years he was a member of the American Ophthalmological Society, serving as Chairman of its Council in 1958. He aided in organizing the National Medical Foundation for Eye Care and was its president.

As a medical student Ralph Rychener married an Ann Arbor girl, Marion Hatch, who died two years ago after 38 years of married life. Many of us will recall how proud Dr. Rychener was to introduce his three married daughters who were present at his induction as T.S.M.A.'s president at the Annual Session in 1960.

We had honored, then, with the presidency of T.S.M.A., a man of many attainments as a physician and surgeon, as a scholar, as a teacher, and as one who gave of his time and energy to the good of the profession and of the public. Not only did we honor him but so did others. In 1951, the American Academy of Ophthalmology and Otolaryngology presented Dr. Rychener with its Honor Medal. From his Alma Mater came the Distinguished Alumni Serv-

(Continued on page 124)

- Outstanding Guest Speakers
- General Scientific Meeting
- Fireside Conferences
- 15 Specialty Society Meetings
- Fun And Entertainment
- Medical Motion Pictures
- Technical Exhibits

TENNESSEE STATE MEDICAL ASSOCIATION

## *1962 Annual Meeting*

PEABODY HOTEL • MEMPHIS *April 8 to 11*

- Presidents' Banquet

Monday, April 9—Peabody Hotel

- House of Delegates

Opening Session Sunday, April 8, 1:00 p.m.

2nd Session Tuesday, April 10, 9:00 a.m.

- Registration Daily

8:00 a.m. to 5:00 p.m. . . . No Registration Fee

### NEW FEATURE

A highlight of the annual meeting—presented for the first time—will be the Fireside Conferences presented at 8:00 P.M. on Tuesday, April 10th, sponsored by the American College of Chest Physicians. You will not want to miss this new scientific feature!



## Special Section

### SCIENTIFIC PROGRAM OF THE 127TH ANNUAL MEETING OF THE TENNESSEE STATE MEDICAL ASSOCIATION

#### General Information

In this program is detailed information on the 1962 Annual Meeting of the Tennessee State Medical Association, conducted in Memphis, Tennessee, April 8-11, 1962.

#### Registration

The registration desk will be located on the Lobby Floor of the Peabody Hotel. All members, visiting speakers, interns, residents, and guests are urged to register. Admission to all sessions and to the exhibits is by a badge secured at the registration desk. **THERE IS NO REGISTRATION FEE.** Programs for all activities during the annual meeting are available at the registration desk. Those eligible to register are: Members of the Tennessee State Medical Association; physicians from other states who are members of their respective State Medical Society; residents, interns, and medical students.

Miss WILLARD BATEY  
Chief Registrar

#### Registration Hours

Sunday, April 8—10:00 A.M. (Special Registration for members of the House of Delegates from 10:00 A.M. to 1:00 P.M.) Advance registration for exhibitors and early arrivals will be conducted from 3:00 P.M. to 5:00 P.M.

Monday, April 9—8:00 A.M. to 5:00 P.M.

Tuesday, April 10—8:00 A.M. to 5:00 P.M.

Wednesday, April 11—8:00 A.M. to 12:00 Noon

#### Annual Meeting Headquarters

Headquarters are in the Peabody Hotel, Memphis, where many activities are scheduled. Practically all of the specialty societies will conduct their meetings concurrently with TSMA in the Peabody. Specialty societies meeting outside of the Peabody Hotel are listed elsewhere in this program. The sessions of the Woman's Auxiliary will be conducted in the Claridge Hotel.

#### TSMA Headquarters Office

Rooms 202-203 located on the Mezzanine Floor of the Peabody Hotel will be the headquarters office of TSMA during the meeting. A member of the staff will be available to assist you at all times. Members of the House of Delegates, Officers, and Reference Committee Chairmen can secure secretarial help when needed. Your headquarters staff is available to assist you in your needs.

J. E. Ballentine, Executive Director  
Jack Drake, Public Service Director  
C. P. Maguire, Administrative Assistant  
Miss Willard Batey, Records and Bookkeeping  
Mrs. Doris Darrow, Secretary  
Mrs. Jean Ragsdale, Secretary

#### President's Banquet and Social Hour

The President's Banquet will be preceded by a Social Hour sponsored by the Tennessee State

Medical Association, beginning at 6:00 P.M. on Monday Evening, April 9th in the Venetian Room of the Peabody.

The Banquet will follow at 7:00 P.M. in the Continental Ballroom. Tickets are available at the registration desk.

#### Message Center—Emergency Telephones Memphis—525-7784 and 525-7785

Telephone service will be installed for your convenience in the Message Center (Room 203) on the Mezzanine floor of the Peabody Hotel. Incoming emergency calls for those attending the meeting will be handled. You will be notified of your call by a "flash screen" in the auditorium where the general scientific meetings are held and you will be paged when necessary. Notify your Secretary or patients to contact you during the annual meeting at the TSMA Emergency Numbers—Memphis 525-7784 and 525-7785.

#### Banquet Tickets

Tickets to the Social Hour and President's Banquet will be available at the Registration Desk. Banquet space is limited, *get your tickets early.* Tickets to specialty society luncheons and banquets, as well as the Woman's Auxiliary affairs, can be obtained from their respective registration desks. **PURCHASE YOUR TICKETS AT THE TIME OF REGISTRATION.** The number that can be accommodated is limited.

#### Woman's Auxiliary

The Woman's Auxiliary to TSMA will conduct all sessions of its Annual Meeting in the Claridge Hotel. The registration desk for the Auxiliary will be located in the Claridge and all Committee Meetings, Board Meetings and the General Sessions will be conducted at the Claridge Hotel.

#### House of Delegates

The first meeting of the House will be held on Sunday, April 8th, beginning at 1:00 P.M. in the Georgian Room of the Peabody Hotel. The second session will be conducted on April 10th, beginning at 9:00 A.M. in the Georgian Room of the Peabody Hotel.

#### General Scientific Meeting

The General Scientific Meetings of TSMA will be conducted from 9:00 A.M. until 12:00 Noon on the mornings of April 9-10-11 in the Continental Ballroom of the Peabody Hotel.

#### Specialty Societies

Sixteen specialty societies have arranged to conduct their meetings concurrently with the Tennessee State Medical Association. The scientific and business sessions of the specialty societies will be conducted in the afternoons of April 8-9-10-11. See details in the program listed under each of these days.

#### Technical Exhibitors

The Technical Exhibitors will be located in the Main Lobby and on the Mezzanine Floor of the Peabody Hotel and may be visited each day of the Annual Meeting, beginning on Monday, April 9th, from 9:00 A.M. until 5:00 P.M., and on Wednesday, April 11, from 9:00 A.M. until 12:00 Noon. The exhibits are an important part of the 127th Annual Meeting and each physician will be well repaid by spending some time inspecting them. The exhibits will display many educational features of the medical supply world.

# ANNOUNCEMENTS— SPECIAL MEETINGS AND EVENTS

## President's Banquet

Peabody Hotel

Monday, April 9—7:00 P.M.

(Social Hour—6:00 P.M.)

Venetian Room

Banquet—Ballroom

Sponsored by TSMA

William O. Vaughan, M.D., President, Presiding  
Guest Entertainer—Mr. Jay Marshall, Chicago  
Introduction of President-Elect—  
William J. Sheridan, M.D.

### Special Awards:

Presenting Tennessee's Outstanding Physician of  
the Year, by Joseph W. Johnson, Jr., M.D.,  
Speaker of the House of Delegates

Presenting Health Project Contest Winner by  
R. M. Finks, M.D., Chairman, Board of Trust-  
tees and Treasurer



## Fireside Conferences

A new feature presented for the first time at  
the Annual Meeting is the Fireside Conferences  
on Cardiorespiratory Diseases, sponsored by the  
Tennessee State Medical Association and the Ten-  
nessee Chapter of the American College of Chest  
Physicians. The Fireside Conferences will be  
presented Tuesday Evening, April 10th, at 8:00  
P.M. in the Venetian Room of the Peabody Hotel.

## Woman's Auxiliary to the Tennessee State Medical Association

April 8-9-10, 1962

Claridge Hotel

Hospitality Room—Aztec Room

Registration

Sunday, April 8—2:00 P.M.-4:00 P.M.

Monday, April 9—8:00 A.M.-1:30 P.M.

Tuesday, April 10—8:00 A.M.-3:30 P.M.

Sunday, April 8, 1962

2:00 P.M.-4:00 P.M.

Registration at Claridge Hotel

Entries accepted for Arts & Crafts—Aztec Room  
Special Committee Meetings (Awards, Revisions,  
Finance), President's Suite, Room 1526

Monday, April 9, 1962

8:00 A.M.-2:30 P.M.

Registration

8:00 A.M.-9:45 A.M.

Pre-Convention Board Meeting—Adams Room  
(Buffet Breakfast)

9:00 A.M.-12:00 Noon

Entries accepted for Arts & Crafts—Aztec Room

9:30 A.M.-4:30 P.M.

Hospitality Room Open—Aztec Room

10:00 A.M.-12:30 P.M.

General Convention Session—Empire Room

1:30 P.M.

House Tour and Tea—Buses leaving at intervals

7:00 P.M.

President's Banquet—Tennessee State Medical  
Association

Tuesday, April 10

8:00 A.M.-12:00 Noon

Registration

9:00 A.M.-12:00 Noon

General Convention Session—Empire Room

9:30 A.M.-4:00 P.M.

Arts & Crafts, Hospitality Room Open—Aztec  
Room

12:30 P.M.

Honors and Awards Luncheon—Balinese Room

3:30 P.M.

Post-Convention Board Meeting—Adams Room

4:00 P.M.-5:00 P.M.

Pick up entries from Arts & Crafts—Aztec Room

## Arts and Crafts Exhibit

The Arts and Crafts Exhibit of the Woman's  
Auxiliary will be conducted in the Claridge Hotel  
—Aztec Room. Doctors and their wives are urged  
to participate in the exhibit.

## Board of Trustees Meeting

The TSMA Board of Trustees will meet in  
Room 214 of the Peabody Hotel at 9:00 A.M. on  
Wednesday, April 11.

## Scientific Exhibits

Any scientific exhibits presented will be dis-  
played on the Mezzanine Floor of the Peabody.

## Technical Exhibits

The exhibits are located in the Main Lobby and  
on the Mezzanine floor of the Peabody. They are  
open daily at 9:00 A.M. These exhibits display  
many educational features of the medical supply  
world of interest to doctors.

## Public Health Council

The Public Health Council will meet in Room  
201 of the Peabody at 10:00 A.M. on Monday,  
April 9.

## Tennessee Medical Foundation

The Tennessee Medical Foundation will meet  
at 8:00 A.M. in Room 200 of the Peabody Hotel  
on Monday, April 9. A membership and business  
meeting will be conducted.



## Tennessee State Orthopaedic Society

The meeting of the Tennessee State Orthopaedic Society will be conducted in the Pathology Building, University of Tennessee Medical School, at 858 Madison Avenue, on Saturday, April 7 and Sunday, April 8. The sessions will begin with registration at 1:00 P.M. on Saturday, April 7 and a scientific program will be conducted on Saturday afternoon from 1:30 until 5:00 P.M.

Cocktails and Dinner will be served at 7:00 P.M., April 7th, at the Memphis Country Club.

A scientific and business meeting will be conducted on Sunday, April 8th.

A special luncheon for wives of members of the Tennessee State Orthopaedic Society will be conducted on Sunday, April 8th at 12:30 P.M. in the Louis XVI Room of the Peabody Hotel.

## Tennessee Society of Internal Medicine

All members of TSMA are invited to be the guests of the Tennessee Society of Internal Medicine on Tuesday, April 10, 1962 from 4:30 P.M. to 5:00 P.M. in the Georgian Room, Hotel Peabody, Management Consultant to the Medical Profession to hear an address by MR. HORACE COTTON, and a Contributing Editor for "Medical Economics." His subject will be "What's Ahead for Medicine."

## Tennessee Society of Plastic Surgeons

The Tennessee Society of Plastic Surgeons will conduct a business meeting on Sunday, April 8, 1962 at 2:00 P.M.

The meeting will be conducted in the Office of the President, Dr. McCarthy DeMere, at 1460 Madison Avenue, Memphis.

## Tennessee State Obstetrical and Gynecological Society

The Society's meeting will begin at 10:00 A.M. with a clinical conference at the University of Tennessee, John Gaston Hospital, Maternity Division, on Tuesday, April 10th.

Luncheon will be served at 12:30 P.M. at Baptist Hospital for members and wives.

The scientific program will begin at 2:00 P.M. and conducted in the University Club, 1346 Central Avenue. The sessions will run until 6:30 P.M. when cocktails and dinner will be served at the University Club.

At 9:00 P.M. a dance will be held at the University Club.

## Technical Exhibits

Technical exhibits for the 1962 Annual Meeting will be displayed on the mezzanine and lobby floors of the Peabody Hotel. The newest developments in pharmaceuticals, equipment and services will be on display, with full information available through trained and experienced representatives.

Exhibits will be open daily from 9:00 A.M. until 5:00 P.M. All physicians will find their time well spent in visiting exhibits and keeping abreast of what is new and useful. *YOUR ATTENDANCE IS URGED*, for your benefit as well as for an expression of cooperation with our exhibitors.

|  |                        |
|--|------------------------|
| ABBOTT LABORATORIES<br>North Chicago, Illinois             | Main Lobby<br>Booth 3  |
| ARNAR-STONE LABORATORIES, INC.<br>Mount Prospect, Illinois | Main Lobby<br>Booth 13 |

|   |                        |
|---|------------------------|
| CAMERON SURGICAL INSTRUMENT CO.<br>Chicago, Illinois                                  | Mezzanine<br>Booth 32  |
| CIBA PHARMACEUTICAL PRODUCTS, INC.<br>Summit, New Jersey                              | Main Lobby<br>Booth 9  |
| THE COCA-COLA COMPANY<br>Atlanta, Georgia   | Mezzanine<br>Booth 45  |
| DAIRY COUNCILS OF TENNESSEE<br>Bristol, Chattanooga, Knoxville, Memphis,<br>Nashville | Mezzanine<br>Booth 46  |
| DE PUY MANUFACTURING CO., INC.<br>Warsaw, Indiana                                     | Main Lobby<br>Booth 4  |
| DOME CHEMICALS, INCORPORATED<br>New York, New York                                    | Mezzanine<br>Booth 51  |
| EATON LABORATORIES (Div. of<br>The Norwich Pharmacal Co.)<br>Norwich, New York        | Main Lobby<br>Booth 8  |
| THOMAS A. EDISON INDUSTRIES<br>Nashville, Tennessee                                   | Main Lobby<br>Booth 14 |
| ELI LILLY AND COMPANY<br>Indianapolis, Indiana  | Mezzanine<br>Booth 20  |
| GEIGY PHARMACEUTICALS<br>Ardley, New York   | Mezzanine<br>Booth 25  |
| HOLLAND-RANTOS COMPANY, INC.<br>New York, New York                                    | Mezzanine<br>Booth 29  |
| JOHN HANCOCK MUTUAL LIFE INS. CO.<br>Boston, Massachusetts                            | Mezzanine<br>Booth 42  |
| KAY SURGICAL, INC.<br>Memphis, Tennessee  | Mezzanine<br>Booth 38  |
| THE LANIER COMPANY<br>Atlanta, Georgia  | Mezzanine<br>Booth 33  |
| LEDERLE LABORATORIES (Division<br>American Cyanamid Company)<br>Pearl River, New York | Mezzanine<br>Booth 48  |
| J. A. MAJORS COMPANY<br>Dallas, Texas   | Main Lobby<br>Booth 5  |
| THE S. E. MASSENGILL COMPANY<br>Bristol, Tennessee                                    | Mezzanine<br>Booth 18  |
| MASSEY DIVISION-ALOE<br>Nashville, Tennessee  | Main Lobby<br>Booth 7  |
| MEAD JOHNSON LABORATORIES<br>Evansville, Indiana                                      | Main Lobby<br>Booth 12 |
| MEDCO PRODUCTS CO., INC.<br>Tulsa, Oklahoma   | Mezzanine<br>Booth 37  |
| MEDICAL-DENTAL-HOSPITAL BUREAU<br>Nashville, Tennessee                                | Mezzanine<br>Booth 47  |
| MERCK SHARP & DOHME<br>West Point, Pennsylvania                                       | Mezzanine<br>Booth 28  |
| MUTUAL BENEFIT LIFE INSURANCE CO.<br>(Dunn-Lemly-Sizer)<br>Nashville, Tennessee       | Mezzanine<br>Booth 49  |
| PARKE, DAVIS & COMPANY<br>Detroit, Michigan   | Mezzanine<br>Booth 26  |
| PFIZER LABORATORIES<br>New York, New York   | Mezzanine<br>Booth 27  |
| PLOUGH LABORATORIES, INC.<br>Memphis, Tennessee                                       | Mezzanine<br>Booth 41  |
| WM. P. POYTHRESS & COMPANY, INC.<br>Richmond, Virginia                                | Mezzanine<br>Booth 23  |
| RIKER LABORATORIES, INC.<br>Northridge, California                                    | Mezzanine<br>Booth 22  |
| A. H. ROBINS COMPANY, INC.<br>Richmond, Virginia                                      | Mezzanine<br>Booth 19  |
| ROCHE LABORATORIES<br>Nutley, New Jersey  | Mezzanine<br>Booth 24  |
| SANDOZ PHARMACEUTICALS<br>Hanover, New Jersey   | Mezzanine<br>Booth 35  |

|   |                        |
|---|------------------------|
| SCHERING CORPORATION<br>Union, New Jersey                 | Mezzanine<br>Booth 50  |
| JULIUS SCHMID, INC.<br>New York, New York                 | Mezzanine<br>Booth 52  |
| G. D. SEARLE & COMPANY<br>Chicago, Illinois               | Main Lobby<br>Booth 1  |
| SMITH, REED, THOMPSON & ELLIS CO.<br>Nashville, Tennessee | Mezzanine<br>Booth 53  |
| SNELLS ARTIFICIAL LIMB COMPANY<br>Nashville, Tennessee    | Mezzanine<br>Booth 44  |
| SOVEREIGN STATES INSURANCE CO.<br>Nashville, Tennessee    | Mezzanine<br>Booth 40  |
| E. R. SQUIBB & SONS<br>New York, New York                 | Mezzanine<br>Booth 36  |
| TENNESSEE GUILD OF DISPENSING<br>OPTICIANS                | Mezzanine<br>Booth 34  |
| TENNESSEE PHARMACEUTICAL CO., INC.<br>Memphis, Tennessee  | Mezzanine<br>Booth 43  |
| TSMA PROFESSIONAL LIABILITY INS.<br>(Malpractice)         | Main Lobby<br>Booth 17 |
| THE UPJOHN COMPANY<br>Kalamazoo, Michigan                 | Mezzanine<br>Booth 21  |
| U.S. VITAMIN & PHARMACEUTICAL CORP.<br>New York, New York | Main Lobby<br>Booth 2  |

#### VISIT THE EXHIBITORS

The general scientific meetings will be recessed in mid-mornings for thirty minutes each day to give doctors an opportunity to visit the exhibitors.

C. P. MAGUIRE  
Director of Exhibits



## PROGRAM

**Sunday, April 8, 1962**

1:00 P.M. (C.S.T.)

House of Delegates, Georgian Room  
Peabody Hotel—Memphis

## SPECIALTY SOCIETIES



### TENNESSEE STATE SOCIETY OF ANESTHESIOLOGISTS

Sunday, April 8, 1962  
Peabody Hotel  
Room 213

10:00 A.M.  
Business Meeting

1:00 P.M.  
Luncheon—Room 214

2:00 P.M.

#### SCIENTIFIC PROGRAM

"RECENT DECISIONS AND CURRENT CONCEPTS IN MEDICAL MALPRACTICE"

By: CARL WASMOUTH, M.D., Cleveland Clinic, Cleveland, Ohio—Speaker of House of Delegates, American Association of Anesthesiologists

### WOMAN'S AUXILIARY TO THE TENNESSEE STATE MEDICAL ASSOCIATION

April 8-10, 1962

CONVENTION HEADQUARTERS  
CLARIDGE HOTEL

\* \* \* \* \*

34th Annual Convention

\* \* \* \* \*

Sunday, April 8

2:00-4:00 P.M. Registration

CLARIDGE HOTEL

2:00-4:00 P.M.

Entries accepted for Arts & Crafts in Aztec Room

2:00-4:00 P.M.

Special Committee Meetings (Awards, Revisions, Finance), President's Suite, Room 1526

Hostess Auxiliary

The Woman's Auxiliary of the Memphis-Shelby County Medical Society

### TENNESSEE STATE PEDIATRIC SOCIETY

Sunday, April 8, 1962

Room 200

Peabody Hotel

4:00 P.M.

Business Meeting



### TENNESSEE SOCIETY OF PLASTIC SURGEONS

Sunday, April 8, 1962

2:00 P.M.

Business Meeting to be conducted in the Office of Dr. McCarthy DeMere, President, 1460 Madison Avenue



### TENNESSEE STATE ORTHOPAEDIC SOCIETY

Sunday, April 8, 1962

Pathology Building

University of Tennessee Medical School

858 Madison Avenue, Memphis

#### PROGRAM

(For Members of TSOS Only)

9:30 A.M.-11:20 A.M.

COMPRESSION PLATE FIXATION—

LEWIS ANDERSON, M.D.

FRACTURES OF THE FEMORAL SHAFT FOLLOWING PROSTHETIC ARTHROPLASTY OF THE HIP—

THOMAS F. PARRISH, M.D., JOHN R. JONES, M.D.  
FILLET PEDICLE OF THE HAND—

LEE MILFORD, M.D.

ANTERIOR LUMBAR FUSION—

WENDELL L. WHITTEMORE, M.D.

(Coffee)

SCOLIOSIS (CASE PRESENTATION)—

ALLEN EDMONSON, M.D.

HIDDEN CALCIUM DEPOSITS IN THE SHOULDER—

THOMAS J. ELLIS, M.D.

12:00-1:00 P.M.

Lunch—University Center

4 South Dunlap Street

1:30 P.M.-2:30 P.M.

(Open to All Members of the TSMA)

PHENYLKETONURIA—

PAUL WILLIAMS, M.D.



## ATHLETIC INJURIES—

MARCUS J. STEWART, M.D.

## PARATHYROID ADENOMA—

R. BEVERLY RAY, M.D.

## ETIOLOGY OF NONUNION—

HAROLD B. BOYD, M.D.

(Coffee)

3:30 P.M.-4:30 P.M.

Guest Speaker

## "ARTHOPLASTY OF THE HIP"

By: Otto Aufranc, M.D., Assistant Professor of Orthopaedic Surgery, Harvard Medical School; Chief of the Fracture Service Clinic, Massachusetts General Hospital, Boston, Mass.



## Monday, April 9, 1962 SCIENTIFIC MEETINGS

### General Scientific Program

Continental Ballroom Peabody Hotel

W. E. SCRIBNER, M.D., Kingsport  
Vice President, TSMA, presiding

9:00 A.M.

Motion Picture—External Cardiac Massage

9:30 A.M.

## "Menstrual Abnormalities in Adolescence"

By: WILLIAM E. BARFIELD, M.D., Associate Professor in Endocrinology, Medical College of Georgia, Augusta, Georgia

10:00 A.M.

Visit Exhibits

10:30 A.M.

## "Human Factors in Aircraft Accident Investigations"

By: COLONEL JOE M. BLUMBERG, Deputy Director, Armed Forces, Institute of Pathology, Washington, D.C.

11:00 A.M.

## Symposium on "Cancer Chemotherapy"

Moderator: RICHARD C. SEXTON, JR., M.D., Knoxville

## "Selection Methods for Cancer Chemotherapeutic Agents"

By: STANFIELD ROGERS, M.D., Knoxville

## "Extracorporeal Perfusion Techniques in Cancer Chemotherapy"

By: E. CONVERSE PEIRCE, II, M.D., Knoxville

## "Useful Current Cancer Chemotherapeutic Agents"

By: DAVE WHITE, M.D., Oak Ridge



## SPECIALTY SOCIETIES

### TENNESSEE ACADEMY OF GENERAL PRACTICE

MONDAY, APRIL 9, 1962

## SCIENTIFIC PROGRAM

(Category I Credit Approved)

TAGP Members

Continental Ballroom Peabody Hotel

1:00 P.M.-2:30 P.M.

## "Abnormal Endocrinology: Menstrual Problems in the Adolescent"

Endocrinologist—WILLIAM BARFIELD, M.D., Augusta, Ga.

Clinician—C. GORDON PEERMAN, M.D., Nashville, Tennessee.

2:30 P.M.-3:00 P.M.

(Intermission)

3:00 P.M.-4:30 P.M.

## "Farm and Home Injuries of the Hand: Their Early and Late Treatment"

Moderator—McCARTHY DEMERE, M.D., Memphis  
JAMES WILSON DAVIS, M.D., Chattanooga

RUFUS CRAVEN, M.D., Memphis

JAMES B. COX, M.D., Knoxville

ROBERT REEDER, M.D., Memphis



### TENNESSEE RADIOLOGICAL SOCIETY

MONDAY, APRIL 9, 1962

Room 213—Peabody Hotel

12:15 P.M.

Luncheon—Room 213

## PROGRAM

1:15 P.M.

## Business Meeting

## Scientific Presentation:

## "Supervoltage X-Ray and the Cobalt Bomb"

By: JOHN D. REEVES, M.D., Professor and Chairman of the Department of Radiology at the University of Florida College of Medicine, Gainesville, Florida

Symposium: Facial X-rays as Related to Plastic Surgery. This session will be open to TSMA members.



### TENNESSEE ACADEMY OF OPHTHALMOLOGY AND OTOLARYNGOLOGY

MONDAY, APRIL 9, 1962

Georgian Room

Peabody Hotel

12:15 P.M.

Luncheon with question and answer round table discussion.

## SCIENTIFIC PROGRAM

2:00 P.M.

## Meeting called to order—Business Meeting

ALICE DEUTSCH, M.D., President

2:30 P.M.

## "Reiter's Syndrome—A Review and Report of Two Cases"

BEN McCARTY, M.D., and PHIL LEWIS, M.D., Memphis

2:50 P.M.

## "Orbital Rhabdomyosarcoma"—A Case Report

E. M. CUBE, M.D., Nashville

3:10 P.M.

## "A New Instrument—The Localizer—Useful in Retinal Detachment Surgery"

WILLIAM F. MURRAH, M.D., Memphis

3:20 P.M.—RECESS

3:30 P.M.

## "X-Ray Evidence of Blowout Orbital Fractures in Absence of Clinical Findings"

REESE PATTERSON, M.D., Knoxville

3:50 P.M.

## "Epithelial Papilloma of the Nasal Cavity"

T. A. MAGUDA, M.D., Memphis

4:10 P.M.

**"Management of Sinus Disease"**

R. V. DEPUE, M.D., Knoxville

4:20 P.M.

**"Newer Techniques in Fenestration of the Oval Window"**

JOHN J. SHEA, M.D., Memphis

**TENNESSEE THORACIC SOCIETY**

MONDAY, APRIL 9, 1962

Room 200—Peabody Hotel

1:30 P.M.

**Business Meeting**

2:00 P.M.

**SCIENTIFIC PROGRAM**

(All Doctors Welcome)

**"Progressive Silicotic Pneumonia"—A Case Report**

GLENN E. HORTON, M.D., Memphis, Tennessee

2:15 P.M.

**"Silicosis: Clinical and Compensation Aspects"**

Guest Speaker—A. H. RUSSAKOFF, M.D.

Birmingham, Alabama

Discussion

3:00 P.M.

**"Preoperative Modification of Bronchogenic Carcinoma by Cobalt Radiation Therapy"**

LESTER C. NUNNALLY, M.D., Memphis

TERRY CRUTHIRDS, M.D., Memphis

FRANCIS H. COLE, M.D., Memphis

**TENNESSEE SOCIETY OF  
PATHOLOGISTS**

MONDAY, APRIL 9, 1962

12:00 Noon

Luncheon

Pompeian Room

Peabody Hotel

**SCIENTIFIC PROGRAM**C. C. ERICKSON, M.D., President, *Presiding*

1:00 P.M.

**"Cryptic Vascular Malformation of the Central Nervous System and Their Relationship with Fatal Hemorrhage"**W. F. McCORMICK, M.D., Department of Pathology  
University of Tennessee, Memphis

1:20 P.M.

**"Motor End Plates—Ultra Structure"**

COL. JOE M. BLUMBERG, M.C.

Armed Forces Institute of Pathology, Washington, D.C.

1:50 P.M.

**"The Drinking Driver"—Breath Tests and Their Interpretation"**

RICHARD H. WALKER, M.D. &amp; JERRY FRANCISCO, M.D.

Department of Pathology, University of Tennessee, Memphis

2:20 P.M.

**"Summary of Recent Experience in the Diagnosis of Liver Disease by Needle Biopsy"**

FRANCIS S. JONES, M.D.

University of Tennessee Memorial Research Center &amp; Hospital, Knoxville

2:40 P.M.

**"Hook Needle Biopsy of Pleura, Pericardium, Peritoneum, and Synovium"**

HERMAN BERNHARDT, M.D.

Veterans Administration Medical Teaching Group, Memphis

3:00 P.M.

(Coffee Break)

3:10 P.M.

**"Fatal Disseminated Herpes Simplex in the New-born Infant"**

WARREN W. JOHNSON, M.D.

Department of Pathology, University of Tennessee, Memphis

3:30 P.M.

**"Myelofibrosis and Hodgkins Disease"**

WILLIAM M. NELSON, M.D.

Medical Division, Oak Ridge Institute of Nuclear Studies, Oak Ridge

3:50 P.M.

**Demonstration of Cytologic Alteration in Hela Cells Following Application of Colchicine, Podophyllin, Estradiol, and Ethanol, Singularity and in Combination**

WILLIAM M. BERTON, M.D.

Department of Pathology, University of Tennessee, Memphis

4:00 P.M.

**"Time Lapse Studies of Cytopathic Changes Produced in Tissue Culture by Measles Virus" (Movie)**

JOHN B. THOMISON, M.D.

Department of Pathology, Vanderbilt University, Nashville

4:20 P.M.

(Coffee Break)

4:30 P.M.

**Business Meeting**C. C. ERICKSON, M.D., President, *Presiding***WOMAN'S AUXILIARY TO THE  
TENNESSEE STATE MEDICAL  
ASSOCIATION**

MONDAY, APRIL 9, 1962

Claridge Hotel

**PROGRAM**

8:00 A.M.-2:30 P.M.

Registration—Claridge Lobby

8:00 A.M.-9:45 A.M.

**Pre-Convention Board Meeting**

Adams Room (Buffet Breakfast)

9:00 A.M.-12:00 Noon

Entries accepted for Arts &amp; Crafts—Aztec Room

9:30 A.M.-4:30 P.M.

**Hospitality Room Open—Aztec Room**

10:00 A.M.-12:30 P.M.

**General Convention Session—Empire Room**

1:30 P.M.

**House Tour and Tea**

(Buses leaving at intervals)

7:00 P.M.

**President's Banquet, Tennessee State Medical Association**

Peabody Hotel (wives invited whether or not husband is in attendance)



## TENNESSEE MEDICAL FOUNDATION

MONDAY, APRIL 9, 1962

Room 200—Peabody Hotel

8:00 A.M.

Membership-Business Meeting—Reports



# Tuesday, April 10, 1962

9:00 A.M.

House of Delegates, Georgian Room  
Peabody Hotel—Memphis

General Practice Day

## General Scientific Program

9:00 A.M.-12:00 Noon

(Jointly presented in cooperation with the Tennessee Academy of General Practice)

Category I credit approved

**Continental Ballroom** **Peabody Hotel**  
SAM HAY, M.D., Murfreesboro, Vice President,  
TSMA, presiding

9:00 A.M.

**"Management of Breast Neoplasms Associated with Pregnancy and Lactation"**

By: BENJAMIN F. BYRD, JR., M.D., Nashville

9:30 A.M.

**"Definition of Insanity"**

JUDGE EDWARD DUMBAULD, Court of Common Pleas, Uniontown, Pennsylvania

10:00 A.M.

Visit Exhibits

10:30 A.M.

**"Mesenteric Vascular Disease"**

By: JOHN D. REEVES, M.D., Professor of Radiology and Head of Department, University of Florida College of Medicine, Gainesville, Florida

11:00 A.M.

**Panel: "Management of the Cardiopulmonary Cripple"**

Moderator: JAMES J. CALLAWAY, M.D., Nashville  
CRAWFORD W. ADAMS, M.D., Nashville  
JOSEPH M. MERRILL, M.D., Nashville  
LLOYD H. RAMSEY, M.D., Nashville  
CLARENCE S. THOMAS, M.D., Nashville



## SPECIALTY SOCIETIES

TENNESSEE CHAPTER  
AMERICAN COLLEGE OF  
SURGEONS

TUESDAY, APRIL 10, 1962

Continental Ballroom—Peabody Hotel

## WELCOME

The Tennessee Chapter, A.C.S. extends a cordial invitation to all physicians attending the TSMA meeting, to be the guests at the scientific sessions of the A.C.S. on Tuesday, April 10. Residents, interns and students are especially welcome.

## PROGRAM

CARROLL H. LONG, M.D., Johnson City, President, Presiding

Talks limited to fifteen minutes. It is suggested that presentation be given in twelve minutes to provide time for questions and discussion.

1:30 P.M.

**"Sarcoid of the Stomach"**

DAVID DODD, M.D., Murfreesboro

**"Cine Fluoroscopy of the Gastro-Intestinal and Biliary Tract"**

COLBY H. GARDNER, M.D., Memphis

**"The Use of Angiotensin II in the Management of Shock"**

RAY STARK, M.D., Memphis

**"Shotgun Injuries"**

ROBERT PARRISH, M.D., Memphis

**"Use and Abuse of Tetanus Antitoxin"**

ROGER SHERMAN, M.D., Memphis

**"Acute and Delayed Rupture of the Spleen"**

LOUIS BRITT, M.D., Memphis

**"Protection from Endotoxin Shock"**

THOMAS JACKSON, M.D., Memphis

**"Experiences with Fibrinolysins in Experimental Thrombotic Diseases"**

WILLIAM LEE, M.D., Memphis

**"Malignant Patent Ductus in Infants"**

JAMES PATE, M.D., Memphis

3:45 P.M.

**Business Meeting of Tennessee Chapter, American College of Surgeons**

JOHN PAUL NORTH, M.D., Director of American College of Surgeons, will speak.

## EVENING PROGRAM

**Continental Ballroom** **Peabody Hotel**

6:00 P.M.

**Social Hour**

7:00 P.M.

**BANQUET (For Members and Wives)**

Speaker: JUDGE EDWARD DUMBAULD  
Judge, Court of Common Pleas,  
Uniontown, Penn.



TENNESSEE ACADEMY OF  
OPHTHALMOLOGY AND  
OTOLARYNGOLOGY

TUESDAY, APRIL 10, 1962

Venetian Room **Peabody Hotel**

12:15 P.M.

**Luncheon** with question and answer round table discussion.

**SCIENTIFIC PROGRAM**

2:00 P.M.

**Meeting called to order—Election of Officers**  
 ALICE DEUTSCH, M.D., President

2:10 P.M.

**"Clinical Evaluation of Retinal Detachment Surgery Using Silicone Implants"**

G. W. BOUNDS, JR., M.D., E. M. CUBE, M.D., and  
 G. ALLEN LAWRENCE, M.D., Nashville

2:30 P.M.

**"Case Report of a Tongue Worm (Linguatula Ser-rata) in the Anterior Chamber"**

MELVIN DEWEESE, M.D., and WILLIAM F. MUR-  
 RAH, M.D., Memphis

2:50 P.M.

**"Clinical Evaluation of Humersol"**

WILLIAM ROWLETT, M.D., and ALICE DEUTSCH,  
 M.D., Memphis

3:10 P.M.

**"Spontaneous Return of Vision" (A Case of Dis-located Lens)**

ROWE DRIVER, M.D., Nashville

3:20 P.M.

**"Brown's Superior Oblique Tendon Sheath Syn-drome—A Case Report"**

CHARLES KING, M.D., Memphis

3:40 P.M.

**"Retinal Detachment, Associated with External Exudative Retinopathy and Secondary Glaucoma in a Two Year Old Child"**

ROLAND MYERS, M.D., Memphis

4:00 P.M.

**"Surgical Management of Defects of the First Bronchial Cleft"**

MCCARTHY DEMERE, M.D., Memphis

4:20 P.M.

**"Mastoidplasty"**

DAVID AUSTIN, M.D., Memphis

4:40 P.M.

**"Osteoma of the Frontal Sinus—A Case Report"**

W. E. DAVID, M.D., Memphis



## TENNESSEE ACADEMY OF PREVENTIVE MEDICINE AND PUBLIC HEALTH

Room 214

Peabody Hotel

TUESDAY, APRIL 10, 1962

12:15 P.M.

Luncheon—Room 214

1:30 P.M.

Scientific Program—Room 214

**"The Responsibility of Organized Medicine in Community Health Services"**

By: BEN FREEDMAN, M.D., M.P.H.  
 Director, Division of Preventive Medicine  
 and Public Health Training

Business Meeting

## TENNESSEE DIABETES ASSOCIATION

TUESDAY, APRIL 10, 1962

Room 200

Peabody Hotel

12:15 P.M.

Luncheon—Room 200

Guest Speaker: GLENN CLARK, M.D., Memphis

Subject: **"Relationship of Gout to Alloxan Dia-betes in the Human"**

### AFTERNOON SCIENTIFIC PROGRAM

**"Surgical Treatment of Diabetic Vascular Disease"**

WILLIAM EDWARDS, M.D., Nashville

**"Thyroid Disease and Diabetes Mellitus"**

WILLIAM LAW, M.D., Knoxville

**"Influence of Thiazides on Carbohydrate Metab-olism"**

J. W. RUNYAN, M.D., Memphis

**"Diabetic Lesions of the Skin"**

ROBERT N. BUCHANAN, JR., M.D., Nashville

Film: **"Diabetes and Its Long Range Control"**

Business Session



## TENNESSEE OBSTETRICAL AND GYNECOLOGICAL SOCIETY

TUESDAY, APRIL 10, 1962

University Club

1346 Central Avenue

Memphis

### PROGRAM

10:00 A.M.-12:00 Noon

Clinical Conference at University of Tennessee—  
 John Gaston Hospital, Maternity Division

12:30 P.M.

**Luncheon at Baptist Hospital for members and wives.** (Courtesy of Baptist Hospital) Followed by a tour of the new Maternity Building, and business session.

### SCIENTIFIC PROGRAM

University Club—1346 Central Avenue—Memphis

2:00 P.M.

Guest Speaker: LAWRENCE HESTER, M.D., Profes-sor of Obstetrics and Gynecology—University of South Carolina

Subject: **"Chemotherapy of Ovarian Carcinoma"**

3:00 P.M.

**"Detection of Fetal Erythrocytes in Maternal Cir-culation"**

EVERETT CLAYTON, M.D., Nashville

3:30 P.M.

**"A Fifteen Year Survey of Third Degree Lacer-ation at Erlanger Hospital"**

WILLIAM CRAWLEY, M.D., Chattanooga

4:00 P.M.

**Four Cases of Ovarian Thecoma**

ROBERT KLINE, M.D., Memphis

6:30 P.M.

**Cocktail Party and Dinner—University Club**

Courtesy of Tennessee Pharmaceutical Company  
 of Memphis, and Memphis Ob-Gyn Society



9:00 P.M.

**DANCE—Playboy Orchestra**

## TENNESSEE PSYCHIATRIC ASSOCIATION

**TUESDAY, APRIL 10, 1962****Room 215****Peabody Hotel**

12:15 P.M.

**Luncheon****SCIENTIFIC PROGRAM****"Sensory Deprivation, A New Research Technique in Psychiatry"**

By: PHILIP SOLOMON, M.D., Associate Clinical Professor of Psychiatry, Harvard Medical School, Department of Psychiatry, Boston

**"New Drugs and Drug Addiction"**

By: MURRAY A. DIAMOND, M.D., Medical Director, U.S. P.H.S., Medical Officer in Charge U.S. P.H.S. Hospital, Lexington, Kentucky

**"Psychiatric Aspects of Facial Deformities"**

By: GREER RICKETSON, M.D., Plastic Surgeon, Nashville

**FIRESIDE CONFERENCES****TUESDAY, APRIL 10, 1962****8:00 P. M. Peabody Hotel Venetian Room****Sponsored by:** Tennessee State Medical Association and Tennessee Chapter, American College of Chest Physicians

There are eleven subjects and discussion leaders.

**See Special Program for this event.**

A panel of experts will be seated at each of eleven tables and physicians attending the session are encouraged to ask questions, express their own ideas and comment on the various problems of the subject under discussion. They may move freely from one table to another, if and when they desire. Refreshments will be served with the compliments of the American College of Chest Physicians.



## TENNESSEE SOCIETY OF INTERNAL MEDICINE

**TUESDAY, APRIL 10, 1962****Georgian Room PROGRAM Peabody Hotel**

4:30-5:00 P.M.

**Invitation—**All Members of TSMA attending the Annual Meeting are invited to be the guests of the Tennessee Society of Internal Medicine for this event.**Address**

By: MR. HORACE COTTON, Management Consultant to the Medical Profession and a contributing Editor of Medical Economics

**Subject: "What's Ahead for Medicine"**

## WOMAN'S AUXILIARY TO THE TENNESSEE STATE MEDICAL ASSOCIATION

**TUESDAY, APRIL 10, 1962****Claridge Hotel****PROGRAM**

8:00 A.M.-12:00 Noon

**Registration—Claridge Lobby**

9:00 A.M.-12:00 Noon

**General Convention Session—Empire Room**

9:30 A.M.-4:00 P.M.

**Arts & Crafts, Hospitality Room Open—Aztec Room**

12:30 P.M.

**Honors and Awards Luncheon—Balinese Room**

3:30 P.M.

**Post-convention Board Meeting—Adams Room**

4:00 P.M.-5:00 P.M.

**Pick up entries from Arts & Crafts—Aztec Room**

## Wednesday, April 11, 1962

### General Scientific Program

**Continental Ballroom Peabody Hotel**

G. BAKER HUBBARD, M.D., Jackson, Vice President, TSMA, presiding

9:00 A.M.

**"Crushing Injuries of the Face Seen on Farm and Highway"**

By: MCCARTHY DEMERE, M.D., Memphis

9:30 A.M.

**"Psychiatry in Medical Practice"**

By: PHILIP SOLOMON, M.D., Associate Clinical Professor of Psychiatry, Harvard Medical School, Boston

10:00 A.M.

**Visit Exhibits**

10:30 A.M.

**"The Clinical Evaluation of Adnexal Masses"**

By: LAWRENCE L. HESTER, JR., M.D., Professor of Obstetrics-Gynecology, Medical College of South Carolina, Charleston

11:00 A.M.

**Symposium: "Treatment of Peptic Ulcer"**Moderator: ALVIN J. CUMMINS, M.D., Memphis  
COLBY H. GARDNER, M.D., Memphis  
MICHAEL GOMPERTZ, M.D., Memphis  
EDWARD H. STORER, M.D., Memphis**RALPH RYCHENER***(Continued from page 114)*

ice Medal from the University of Michigan Alumni Council, also in 1951, and in 1956 the University's Development Council's Citation of Honor.

Properly, time and space have been allotted to Ralph Rychener's professional attainments. But it must not be thought that he was one with the narrow horizons of his profession only. His hobbies, nonmedical activities and civic contributions point to one with broad and nonprovincial interests. Had he lived, a man such as this would have continued to contribute to human welfare.

R. H. K.

## UNFORTUNATE ADVERTISING

The Chrysler Corporation, in advertising its *Imperial*, has, I believe, made an unfortunate selection for consumer appeal.

In the ad referred to below, in *TIME*, "To America's 5,344 Leading Doctors" appeared in bold-face type and in letters of one-quarter inch in height! It was successful in attracting attention! It goes on to say, "In the next few days, you (and a number of your medical colleagues) will receive a letter or a phone call offering you the personal use of a new 1962 Imperial. . . . The car will be delivered to you . . . for a private . . . test. . . . Please accept our invitation." Then finally the jolting words, "Even though you aren't a doctor, we'll gladly arrange an Imperial comparison tour for you."

This advertisement so irritated one of Nashville's well known physicians that he addressed the following letter to the advertiser and gave me a copy:

"General Manager, Imperial Division  
Chrysler Corporation  
12200 East Jefferson  
Detroit, Michigan  
Dear Sir:

"In your advertisement in *TIME* Magazine, February 16, 1962, I feel that you have helped neither the Chrysler Corporation nor the medical profession.

"In directing your advertisement of a Chrysler Imperial 'To America's 5,344 Leading Doctors' you imply that physicians constitute a particularly affluent group. As a result of their talents and industry it is entirely possible that many of them can afford your automobile. I am certain that there are others who might also fall into such a category.

"At a time when the public is concerned about the rising hospital costs and other problems of medical care, an advertising appeal with such implications cannot improve a difficult situation.

"It is possible that your advertising specialists were trying to enhance the 'status symbol' aspect of your product, although I doubt that very careful consideration was given to this move.

"I have purchased a DeSoto and a Plymouth in the past. I shall personally indicate my disapproval of such advertising by not purchasing your products in the future.

Very truly yours,

A sequel to the first ad in *TIME* appeared in the March Issue of the *NATIONAL GEOGRAPHIC MAGAZINE*. Again in the same type appeared, "Leading Doctors Ac-

cept New Imperials for Comparison Testing." It goes on to say, "Recently we invited the nation's leading doctors to drive new Imperials. Our dealers are continuing to deliver these cars to the doctors' personal care for a thorough comparison tour. . . . Those who own other fine cars are particularly impressed with Imperial's greater degree of comfort and over-all performance. . . . It may be you are *not* a doctor, but would like to discover for yourself. . . ."

This latter ad also appeared in the *AMA NEWS* of March 5. Its appearance in this medium is not cause for quarrel since it makes an appeal to a limited audience and a medical one. However, this does not alter my belief that singling out 5,344 physicians from a population of 180 million (in an ad in magazines for the public) represents unfortunate and untimely advertising. Our nonmedical friends like to needle us by saying we are "paranoid" or supersensitive. Possibly we are, and I must admit that even as a physician who has not had a livelihood from the collection of fees from sick people, I am quite "paranoid."

This is a time when powerful forces are moving to take the *future* of the Nation's medical care from the hands of the medical profession and place it in the hands of bureaucrats. The fulminations of certain senators and representatives are aided and abetted by the fourth estate, whether in a staid *HARPER'S* or in a rabble rousing labor paper. This intemperate press and its cartoons always portray the medical profession's fear of governmental control in terms of the pocket-book.

Thus, at a time when the *quality* of medical care in this country is being threatened, and when some bright young men are shunning medical school and a medical career to enter other scientific fields or industry, this advertising is in poor taste and unfortunate. Labor and other pressure groups will thank Chrysler for adding fuel to the fire of the doctor's bad "image." Reminiscent of *Cadillacs* dubbed as "penicillin buggies" some years ago, one wonders if *Imperials* will become known as "cortisone carts!"

R. H. K.



## DEATHS

**Dr. Ralph O. Rychener**, 64, Memphis, died February 12th at Methodist Hospital. He was immediate past-president of the Tennessee State Medical Association. He was a past-president of the Memphis and Shelby County Medical Society and from 1955 through 1961, he was president of the National Medical Foundation for Eye Care.

**Dr. Joseph Drake Anderson**, 52, Nashville, died January 28th at Vanderbilt Hospital. He had been ill for several months. At the time of his death, Dr. Anderson was vice-chairman for Tennessee of the American College of Obstetrics and Gynecology.

**Dr. James L. Ames**, 82, Lebanon, died February 11th at a Lebanon Nursing Home.

**Dr. Eleanor Williamson**, 43, Columbia, died February 17th.

## PROGRAMS AND NEWS OF MEDICAL SOCIETIES

### Roane County Medical Society

The Society met on February 27th in the Oak Ridge Hospital, the meeting being preceded by a dinner. The program consisted of a discussion of the King-Anderson bill. Those participating in the program were Mr. Jack Drake, Public Service Director of TSMA, and Mr. Robert Cheek, Attorney of Knoxville.

### Nashville Academy of Medicine and Davidson County Medical Society

A new innovation was tried by the Society at its meeting on February 13th, conducted at the Andrew Jackson Hotel. The meeting was combined with the Visiting Staff Meetings of four hospitals and the Academy.

The scientific program consisted of addresses given by Dr. Louis Diamond, Boston, Massachusetts, internationally known pediatric hematologist, whose subject was "Problems in the Management of Blood Group Incompatibility in Women and Children"; Dr. Ralph Bowers of Memphis, chief of the surgical service at Kennedy VA Hospital and an authority on biliary tract surgery presented, "Some Remaining Problems in Biliary Tract Surgery"; and Dr. William Winternitz, associate professor of medicine at the University of Kentucky

Medical Center, Lexington with the subject "Some Aspects of Metabolic Bone Diseases."

### Chattanooga-Hamilton County Medical Society

The Society's regular monthly meeting was conducted on February 6th in the Interstate Building. The scientific program consisted of a paper, "Thyroid Disease in Hamilton County" by Dr. Joseph W. Graves.

"Recent Neurosurgical Advances and What's in the Future" was a second paper delivered by Dr. Edwin F. Chobot, Jr.

### Memphis-Shelby County Medical Society

The Society's regular monthly meeting was conducted on January 12th at the University Club where the meeting was preceded by a dinner. The speaker was Representative Dale Alford (D., Ark.). Dr. Alford, an eye specialist from Little Rock, Arkansas, spoke on the subject "Civic Responsibilities of a Physician."

### Knoxville Academy of Medicine

The Academy's monthly meeting was held in the auditorium of the Knoxville Academy of Medicine on February 13th. The guest speaker was Mr. Lee Anderson, Chattanooga. The program was the annual public service program presented by the Academy's committee. Mr. Anderson, Editor of the *Chattanooga News-Free Press*, spoke on the subject, "The Influences Threatening American Constitutional Liberties and the Need for Cooperation Between Medicine and The Press." Guests from various news media of Knoxville and representatives of the Junior Chamber of Commerce attended.

### Consolidated Medical Assembly of West Tennessee

The Society met for its monthly meeting in the New Southern Hotel on February 6th. "The Cuban Problem" was the subject of an address by Dr. Arturo Aballi. Dr. Aballi is assistant professor of pediatrics, University of Tennessee College of Medicine, Memphis.

The meeting was a joint one with the Auxiliary. Delegates to the House of Dele-

gates conducted a business meeting prior to the dinner.

### Greene County Medical Society

The Society met on February 6th at the Elks Lodge in Greeneville. Dr. Ben Keebler, President, presided. Following dinner, several important items of business and local interest were presented to the membership.

## NATIONAL NEWS

### The Month in Washington

(From the Washington Office of AMA)

The American Medical Association again endorsed a legislative proposal that the federal government help finance construction of new medical schools and expansion and modernization of existing ones.

Dr. Gerald D. Dorman of New York City, a member of the AMA Board of Trustees, told the House Interstate and Foreign Commerce Committee: "We believe that there is need for assistance in the expansion, construction and remodeling of the physical facilities of medical schools, and, therefore, a one-time expenditure of federal funds on a matching basis is justified, where maximum freedom of the school from federal control is assured."

Dr. Dorman was presenting the AMA position on the Kennedy Administration's 10-year, \$932 million program (H.R. 4999) for federal aid to medical education. The legislation also proposed scholarships for medical and dental students.

"If the high standards of medical education are to be maintained, increased attention must be given to the adequacy of physical facilities, the availability of qualified instructors and the availability of teaching material and patients for the clinical phases of medical education," Dr. Dorman said. "Any attempt to increase the number of medical students without regard to these conditions will result in a lowering of the standard of medical education. At this time, priority should be given to an increase in the physical facilities available for medical education."

Dr. Dorman said the AMA, had not taken a position on the other sections of H.R. 4999.

However, he reviewed related AMA programs. "For some time, the American Medical Association has been aware of the decline in the number of eligible college students seeking admission to medical schools," he said. "This apparent shift away from medicine is due, in part, we believe, to the high cost in time and money of securing a medical education. This trend has been accentuated by a dramatic emphasis on careers in science and engineering. . . .

"The House of Delegates of the American Medical Association in November, 1960, established two programs, the objectives of which are complementary and interrelated.

"First, the House authorized a student honors and scholarship program designed to focus attention on careers in medicine, to attract a substantial group of able students to prepare for admission to medical schools and to assist financially a limited number of outstanding students who, for financial reasons, are unable to pursue a career in medicine.

"Second, the AMA House of Delegates had adopted a student loan program designed to alleviate the financial difficulties of medical students and to encourage career decisions in favor of medicine."

Dr. Dorman also pointed out that the AMA in the past ten years, in collaboration with the Association of American Medical Colleges, had aided interested organizations in the establishment of six new medical schools." Currently, commitments have been obtained for another five schools and we are in consultation with sixteen institutions or organizations presently contemplating the establishment of new medical schools," he added.

★

The AMA said it would be irresponsible to combine the King-Anderson bill with legislation that would permit physicians and other self-employed persons to defer federal income tax on income placed in specified private retirement funds.

Sen. Clinton P. Anderson (D., N.M.), co-author of the King-Anderson bill which would provide limited health care for aged persons under social security, suggested the combining tactic during a televised debate on the medical care issue with Sen. John Tower (R., Tex.).



The private retirement legislation—H.R. 10, the Keogh bill—would extend to an estimated 11 million self-employed and their employees the same tax benefits now provided to about 20 million wage earners covered by 66,000 company pension plans.

"This 'doubling-up' proposal of Sen. Anderson certainly proves the insincerity of the King-Anderson bill," Dr. F. J. L. Blasingame, Executive Vice President of the AMA, said. "It lays bare the fact that this is wholly a political issue and not a sincere attempt to grant meaningful medical care for the aged.

"It would be an irresponsible bit of legislative slight of hand to combine Sen. Anderson's proposed compulsory medical care program with a bill to eliminate tax inequities inflicted on the self-employed.

"Such unwarranted action could only serve Sen. Anderson's own political ambitions at the expense of millions of Americans.

"The bills have nothing in common. There is no reason whatsoever for combining them except that Sen. Anderson is attempting to harass critics of his bill into silence.

"He even calls the Keogh bill the 'doctors' special pension program, ignoring the fact that doctors make up only about 2.6 per cent of those self-employed who would be getting tax equity."

The Keogh bill has revived widespread by-partisan support in both houses of Congress. It was passed by an overwhelming vote in the House last summer and cleared the Senate Finance Committee by 13-3 vote.

### Blue Shield

A uniform, nationwide Blue Shield program for all persons over age 65 was announced jointly on January 18 by the American Medical Association and the National Association of Blue Shield Plans. . . . The program will cost about \$3 a month per person. . . . It will pay the full cost of medical-surgical services for single persons over 65 whose annual income is \$2,500 or less and for a husband and wife whose combined annual income is \$4,000 or under. . . . Persons whose income exceed these limits could be subject to an additional charge. . . . Dr. F. J. L. Blasingame, AMA Executive

Vice President, said the new program represents "another important step in the direction of achieving through voluntary, private initiative an effective solution to the problem of meeting the health care needs of the aged."

## MEDICAL NEWS IN TENNESSEE

### Vanderbilt University School of Medicine

Effective Jan. 1, 1962, Vanderbilt was chosen as one of 22 participating institutions in the Central National Cooperative Cancer Chemotherapy Studies (in cooperation with the Cancer Chemotherapy National Service Center in Washington and the Public Health Service). It is an effort to evaluate in a short period of time a large number of chemotherapeutic drugs from the experimental laboratories that are being delivered into the hands of investigators each year. In the past these studies have been run rather haphazardly and it has been extremely difficult to get a wide evaluation on a large number of tumors in any length of time for human application.

The Vanderbilt University Unit which includes Nashville General Hospital has been assigned two drugs which are actively under investigation. These are 5-FUDR and Alanine Mustard.

There are certain limitations which must be placed on such a study. The patients must have a life expectancy of at least two months. All the drugs to be tested have shown experimental evidence of tumor suppression prior to being released for human trials. The patients must be inoperable and have metastatic disease; there must have been at least a month's lapse from the time of x-ray or radium therapy, and there must have been at least two to three weeks' lapse from the time of previous antimetabolite or hormonal therapy.

The Vanderbilt Hospital Cancer Chemotherapy Center Clinic meets on Thursday afternoon of each week from 1:00 to 3:30 P.M. Any patient may be referred to this clinic for evaluation and possible therapy with these new drugs. Private patients whom doctors wish to refer for these drugs and who will cooperate to the extent of finishing the course of treatment and also the follow-up and pre-treatment laboratory tests, will be seen. Information is available from either Dr. John Sawyers, Nashville General Hospital, or Dr. Sam Stephenson, Vanderbilt University Hospital.

# **PRESCRIPTION FORMULARY—MEDICAL ASSISTANCE FOR THE AGED**

**Tennessee Department of Public Welfare (Feb. 1, 1962)**

For the Department of Public Welfare to make payment for drugs it is necessary that:

1. Prescriptions be written per formulary.
2. No more than a 30-day supply of drugs be dispensed at one time.
3. A new prescription be written each time drugs are dispensed. The Department cannot pay for refills.

| <i>Item</i>   | <i>Strength</i>      | <i>Unit</i> | <i>Cost Per Unit</i> |
|---|----------------------|-------------|----------------------|
| Theophylline ethylenediamine<br>(Aminophylline) injection         | 500 mg. in 20 ml     | 1           | \$ 1.00              |
| Theophylline ethylenediamine<br>(Aminophylline) suppository       | 500 mg.              | 6           | 1.25                 |
| Digitalis   | 0.1 gm.              | 60 Tabs.    | .75                  |
| Digitoxin   | 0.1 mg.              | 60 Tabs.    | 1.10                 |
| Crystodigin   | 0.1 mg.              | 100 Tabs.   | 1.75                 |
|   |                      | 50 Tabs.    | 1.00                 |
|   |                      | 25 Tabs.    | .75                  |
| Crystodigin   | 0.15 mg.             | 100 Tabs.   | 1.90                 |
|   |                      | 50 Tabs.    | 1.00                 |
| Crystodigin   | 0.2 mg.              | 100 Tabs.   | 2.00                 |
|   |                      | 50 Tabs.    | 1.25                 |
| Quinidine sulfate   | 0.2 gm.              | 60 Tabs.    | 3.50                 |
| Rauwolfia serpentina (Reserpine)                                  | 0.1 mg.              | 30 Tabs.    | 1.50                 |
| Hydrochlorothiazide   | 50 mg.               | 15 Tabs.    | 2.10                 |
| Tincture of belladonna  | U.S.P.               | 60 cc.      | 1.00                 |
| Camphorated tincture of opium<br>(Paregoric)                      | U.S.P.               | 30 cc.      | .35                  |
| Aluminum hydroxide gel with<br>magnesium trisilicate              | —                    | 360 cc.     | \$ 1.60              |
| Liquid petrolatum (Mineral Oil)                                   | —                    | 240 cc.     | .50                  |
| Magnesia magma (milk of magnesia)                                 | —                    | 240 cc.     | .50                  |
| Penicillin V—oral   | 250 mg.              | 16          | 4.25                 |
| Procaine penicillin G   | 300,000 units (1cc.) | 1           | .75                  |
| Triple-sulfa suspension   | 0.5 gm./5cc.         | 60 cc.      | 1.00                 |
| Tetracycline capsules   | 250 mg.              | 16          | 6.40                 |
| Isonicotinic acid hydrazide                                       | 100 mg.              | 50          | 1.25                 |
| Chloramphenicol (Chloromycetin)<br>capsules                       | 250 mg.              | 16          | 7.25                 |
| Propionyl erthromycin ester lauryl<br>sulphate (Ilosone) capsules | 250 mg.              | 16          | 6.40                 |
| Insulin, regular  | U 40                 | 10 cc.      | 1.26                 |
|   | U 80                 | 10 cc.      | 2.47                 |
| Insulin N.P.H.  | U 40                 | 10 cc.      | 1.48                 |
|   | U 80                 | 10 cc.      | 2.83                 |
| Insulin lente   | U 40                 | 10 cc.      | 1.48                 |
|   | U 80                 | 10 cc.      | 2.83                 |
| Insulin P.Z.  | U 40                 | 10 cc.      | 1.48                 |
|   | U 80                 | 10 cc.      | 2.83                 |
| Phenformin HCL (D.B.I.)   | 25 mg.               | 50 Tabs.    | 2.25                 |
| Tolbutamide (Orinase)   | 0.5 gm.              | 50 Tabs.    | 6.25                 |
| Propylthiouracil tablets  | 25 mg.               | 60 Tabs.    | 1.15                 |
|   | 50 mg.               | 60 Tabs.    | 2.10                 |
| Prednisone  | 5 mg.                | 10 Tabs.    | 2.50                 |
| Esidrix   | 250 mg.              | 25 Tabs.    | 2.00                 |
|   |                      | 50 Tabs.    | 3.85                 |
|   |                      | 100 Tabs.   | 7.00                 |
| Esidrix   | 500 mg.              | 25 Tabs.    | \$ 3.25              |
|   |                      | 50 Tabs.    | 6.00                 |
|   |                      | 100 Tabs.   | 11.00                |
| Diuril  | 250 mg.              | 25 Tabs.    | 2.00                 |
|   |                      | 50 Tabs.    | 3.85                 |
|   |                      | 100 Tabs.   | 7.00                 |
| Diuril  | 500 mg.              | 25 Tabs.    | 3.25                 |
|   |                      | 50 Tabs.    | 6.00                 |
|   |                      | 100 Tabs.   | 11.00                |
| Gantrisin   | 0.5 mg.              | 25 Tabs.    | 1.65                 |
|   |                      | 50 Tabs.    | 2.75                 |
|   |                      | 100 Tabs.   | 5.45                 |



## St. Jude Hospital Dedicated in Memphis

Official opening of the \$3 million St. Jude Hospital located in Memphis was held on February 4th, 1962. The hospital, founded by Danny Thomas, is intended for research concerning leukemia and other serious problems of infancy and childhood. Danny Thomas presided at the opening of the hospital. Senator Estes Kefauver, Governor Buford Ellington and Congressman Clifford Davis attended the opening.

The public was invited to take tours of the hospital following the ceremony. Members of the Memphis-Shelby County Medical Society participated in the official opening.

The star-shaped hospital has a 36-bed nursing unit and an out-patient clinic, but most of its facilities will be devoted to laboratories for studies in microbiology, cell biology, biochemistry and pathology.

## Central Health Information

The Nashville Academy of Medicine has instituted a Central Health Information service. Details on all local health and medical services is available through the Bureau.

Physicians, hospitals, health and welfare agencies, and the public are urged to use this centralized service. The Bureau was established by the Academy of Medicine and the City-County Public Health Department with the cooperation of the local Cancer, Heart and Antituberculosis organizations. In addition to routine data, information includes such complex matters as: diagnosis and therapy for the medically indigent with several different conditions; appliances, hearing aids and glasses; eligibility for health agency services; hospital clinic services and schedules.

## Mid-South Postgraduate Medical Assembly

Some 1,000 physicians from seven states attended the 73rd annual meeting of the Mid-South Postgraduate Medical Assembly, held in Memphis at the Peabody Hotel, February 13-16.

Nineteen outstanding guest speakers and 85 technical exhibits were presented at the meeting. Subjects discussed included heart

disease and cancer, along with philosophical subjects.

A complete list of the guest speakers and subjects presented appeared in the *December issue of the Journal*. Dr. Gilbert J. Levy assumed the presidency for 1962.

## Memphis Eye, Ear, Nose and Throat Meeting

The Memphis Eye, Ear, Nose and Throat convention was held February 10-12 at the Peabody Hotel, Memphis. The convention preceded the annual meeting of the Mid-South Postgraduate Medical Assembly.

Lectures on eye diseases covered such topics as symptoms of retinal detachment, diagnosis of optic neuritis and latest changes in surgical techniques.

Speakers on ophthalmology were Dr. John W. Henderson, Rochester, Minnesota, and Dr. Graham Clark of New York. Lectures on ear, nose and throat ailments dealt with surgical anatomy of the middle ear, management of lye burns, headache, cancer of the larynx and sinusitis.

Otolaryngologists giving the talks were Dr. Joseph H. Ogura of St. Louis, Dr. Bruce Proctor of Detroit, and Dr. P. E. Ireland, Toronto, Canada.

The Memphis Society of Ophthalmology and Otolaryngology were hosts for the convention.

## Chattanooga Academy of Surgery

Dr. Champ Lyons, professor of surgery and chairman of the department of surgery of the University of Alabama Medical Center, Birmingham, addressed the Academy on January 30th. He spoke on "Diagnoses Based on Arteriography." The meeting was held at the Mountain City Club.

## Memphis Surgical Society

Dr. Rupert B. Turnbull, Jr. of Cleveland Clinic, Cleveland, Ohio, was the guest speaker on January 24th at the meeting of the Memphis Surgical Society at the University Club.

## Chattanooga Heart Association

The 11th annual heart symposium was presented in Chattanooga on January 22nd. Dr. Maurice S. Rawlings was chairman of the symposium committee. Others on the committee were Drs. Philip Livingston,

Jesse Adams, Fred Ballard and Edward F. Buchner.

Appearing on the program were: Dr. William Likoff, cardiologist and professor of medicine at Hahnemann Medical College in Philadelphia; Dr. W. Sterling Edwards, cardiovascular surgeon who is a member of the faculty of the Medical College of Alabama; and Dr. Sam Proger, physician-in-chief, New England Center Hospital and professor and chairman of the Department of Medicine, Tufts University School of Medicine. The symposium was held at Erlanger Hospital.

### East Tennessee Heart Association

More than 200 doctors from a six-state area met in Knoxville for the 12th annual medical symposium presented by the East Tennessee Heart Association. The meeting was held on January 15th.

The symposium featured "Progress Reports in Cardiovascular Disease." Those who addressed the group were: Dr. Charles A. Hufnagel, professor of surgery at Georgetown University Medical School in Washington, D.C.; Dr. Helen B. Taussig, professor of pediatrics at Johns Hopkins University in Baltimore, Md.; Dr. I. Frank Tullis, professor, department of medicine, University of Tennessee College of Medicine at Memphis; and Major A. G. Swann, medical director of the Aerospace Medical Laboratory at Wright-Patterson Air Force Base, Dayton, Ohio. Doctors attending were from Tennessee, Alabama, Georgia, Kentucky, Mississippi and Virginia.

### Tennessee Medical Schools Receive Funds from AMERF

A check for \$20,041.57 was accepted by the Dean of Vanderbilt University Medical School and \$5,716.07 was presented to the Dean of Meharry Medical College by Dr. W. O. Vaughan, President of the Tennessee State Medical Association. The money was a part of the total \$41,776.26 given Tennessee's three medical schools by AMERF. The University of Tennessee College of Medicine, Memphis, received \$16,018.62.

These funds may be used at the discretion of the individual schools for special projects or expenses outside their budgets.

### U.S. Public Health Service Grants

Vanderbilt University School of Medicine has been awarded \$188,325 by the U.S. Public Health Service. Meharry Medical College was awarded \$51,778 for medicine and \$30,433 for dentistry. The grants were designed for further research and training.

### University of Tennessee College of Medicine

The Board of Trustees has voted to proceed with plans for expanding the UT Medical units. The facilities for expansion will include needed buildings, classrooms, a medical library building and more facilities for student housing.

★

The National Science Foundation has granted \$5,000 to the University of Tennessee Medical Units to support undergraduate college students in research during the summer term. The grant was made to the division of biochemistry.

★

Two grants totaling \$212,683 have been received for the University of Tennessee Memorial Research Center. The grants were made by the National Institute of Health and the U.S. Public Health Service.

★

Dr. Samuel R. Tipton, department of zoology, has received a \$20,000 grant from the National Science Foundation to continue his study of the thyroid and its relation to body energy.

★

\$167,000 grant has been awarded by the National Institutes of Health. The award is on a continuing basis and will be increased from year to year. The grant is to Dr. M. K. Callison, Dean of the College of Medicine, and Dr. Roland H. Alden, Dean of the School of Basic Medical Sciences.

## PERSONAL NEWS

**Dr. O. S. Luton** announces the association of **Dr. Albert J. Mitchum** in the practice of medicine and surgery at Hilcrest Clinic in Erin.

**Dr. Bernard M. Zussman**, Memphis, has been recently certified by the American Board of Allergy, Sub-specialty Board of Internal Medicine.

**Dr. Glenn E. Horton**, Memphis, has been appointed to the American College of Allergy Com-



mittee on Bronchopulmonary Physiological Therapy.

**Dr. James L. Allen** has opened his office for the practice of medicine at Calhoun.

**Dr. John E. Neumann**, Paris, recently addressed the Paris Quota Club.

**Dr. W. E. McGaha** has been elected president of the Cocke County Medical Society. Other officers are: **Dr. W. B. Robinson**, vice president; **Dr. Robert McMahan**, secretary-treasurer; and **Dr. Fred M. Valentine, Sr.**, delegate to the Tennessee Medical Association House of Delegates. All are from Newport.

**Dr. Bruce E. Galbraith**, Tullahoma, is the new president of the Coffee County Medical Society. Other officers are: **Dr. Clarence Farrar**, vice-president, and **Dr. L. G. Gardner, Jr.**, secretary-treasurer. The latter two are from Manchester.

**Dr. John Burkhart**, Knoxville, recently addressed the Senior Citizens Club on the subject "The Relationship Between the Doctor and His Patients and to the Trends in Hospitalization and Home Calls."

**Dr. L. B. Molloy**, Lawrenceburg, is the new president of the Lawrence County Medical Society. **Dr. Dexter L. Woods, Jr.** is vice-president and **Dr. Malcolm Weathers** is secretary.

**Dr. Kenneth Kaufman**, Murfreesboro, recently addressed the Shelbyville Kiwanis Club.

**Dr. E. P. Muncy**, Jefferson City, recently addressed the Cherokee Lions Club at Morristown.

**Dr. Joseph Zuckerman** spoke recently on "Hereditary Aspects of Cystic Fibrosis" before the Chattanooga Cystic Fibrosis Association.

**Dr. Alvin J. Ingram**, Memphis, was a participant before the Memphis Public Affairs Forum on the subject, "Should We Provide Medical Care for the Aged Under Social Security?"

**Dr. R. C. Christensen**, Kingsport, has been named president of the medical staff at Holston Valley Community Hospital. The president-elect is **Dr. James E. Shull** and secretary-treasurer is **Dr. J. K. Maloy**.

**Dr. Crawford W. Adams**, Nashville, recently spoke before the Memphis Heart Association.

**Dr. Frank Moore**, Jackson, has been appointed Madison County physician by the County Court.

**Dr. William Acree**, Ridgely, recently addressed the Union City Rotary Club.

**Dr. N. B. Norris, Jr.** announces the opening of his office for the practice of medicine on Hixson Pike in Chattanooga.

**Dr. McCarthy DeMere**, Memphis, has been named president of the Law-Science Academy of America.

**Dr. G. Baker Hubbard**, Jackson, has been elected chief of the Jackson-Madison County General Hospital medical staff. **Dr. George Harvey, Jr.** was named assistant chief.

**Dr. Byron O. Garner**, Union City, recently addressed the Kiwanis Club.

**Dr. Joseph C. Orman**, Memphis, was the featured speaker at the meeting of the Memphis Hospital Auxiliary. His subject was "Kidney Infection and Diabetes."

**Dr. Roland Myers**, Memphis, has been elected chief of staff of the Memphis Eye, Ear, Nose and Throat Hospital. **Dr. Edwin W. Cocke, Jr.** was named vice-chief and **Dr. Ralph S. Hamilton** was elected secretary.

**Dr. George Livermore** and **Dr. Robert Ackerman** were recent speakers before the Memphis Lay-Diabetic Association.

**Dr. James N. Thomasson**, Nashville, has been named chairman of the Board of Directors of the Nashville Academy of Medicine.

Nashville physicians as chiefs of various services of St. Thomas Hospital are: **Dr. Rollin A. Daniel**, chief of surgery; **Dr. Robert Chalfant**, chief of obstetrics and gynecology; **Dr. James Callaway**, chief of internal medicine; and **Dr. J. M. Strayhorn**, chief of pediatrics.

**Dr. Thomas F. Frist**, Nashville, recently addressed the Murfreesboro Business and Professional Women's Club.

**Dr. Dan R. Thomas**, Knoxville, has been named the outstanding Scottish Rite Mason of East Tennessee for 1961.

**Dr. William S. Myers** has opened his office for the practice of medicine in Obion.

**Dr. Fred M. Valentine, Jr.**, Newport, was a recent speaker at the Rotary Club. His subject was "Socialized Medicine."

**Dr. J. Malcolm Aste**, Memphis, has been named president of the Methodist Hospital Medical Staff. **Dr. J. A. Rothschild** was elected vice president and **Dr. William H. Morse** re-elected secretary.

**Dr. Kent Carter**, Johnson City, was the speaker for a recent meeting of the Tennessee Nurses Association, District V. His topic was "Space Medicine."

**Dr. James M. King**, Tullahoma, has been elected for the third time as president of the Tennessee Baptist Foundation.

**Dr. Benjamin Fowler**, Nashville, has been elected president of the attending staff of St. Thomas Hospital. **Dr. Ben Mayes**, Nashville, was named president-elect. **Dr. David R. Pickens** was re-elected secretary-treasurer.

**Dr. Raymond Johnson**, Oak Ridge, was a recent panelist before the Linden School PTA meeting. His subject was "Medical Emergencies of Childhood."

**Dr. J. William Hillman**, Nashville, was a guest speaker at the meeting of the Middle Tennessee District of the Tennessee Chapter of the American Physical Therapy Association.

**Dr. L. Quentin Myers** has opened his office for the practice of ophthalmology in Maryville.

**Dr. Warren W. Johnson**, Memphis, has been appointed pathologist at the new St. Jude Hospital.

**Dr. Joseph W. Johnson, Jr.**, Chattanooga, has been named to the Board of Directors of the Life Insurance Medical Research Fund.

**Dr. Ralph Braund**, Memphis, spoke on the subject "Present Day Trend in Cancer Therapy" at the Jewish Community Center recently.

**Dr. Joe Campbell**, Union City, was a recent speaker before the Kiwanis Club.

**Dr. John B. Bond**, Nashville, has opened his office for the practice of ophthalmology.

## ANNOUNCEMENTS

### Upper East Tennessee Pediatric Association

The annual meeting of the Upper East Tennessee Pediatric Association will be held in Gatlinburg, Tennessee on June 9, 1962 at the New Gatlinburg Inn.

Dr. Samuel Livingston of Johns Hopkins Medical School will be one of the guest speakers. The annual banquet will be held in the evening. All physicians interested in pediatrics are invited. This meeting is acceptable for 6 hours of Category II Credit by The American Academy of General Practice.

### Symposium on Clinical Allergy

Symposium on Clinical Allergy—Mound Park Hospital Foundation, Department of Medical Education of Mound Park Hospital, Research Division Bay Pines V.A. Center, A.A.G.P.—April 19 to 21 inclusive. Limited to 35 physicians. Fee \$40.00. 12 Credit Hours Category I allowed. Address ALLERGY, Mound Park Hospital Foundation, Inc., St. Petersburg, Florida.

### Seminar on Arthritis and Rheumatic Diseases

A postgraduate seminar on arthritis and rheumatic diseases, Virginia Chapter, The Arthritis and Rheumatism Foundation, will be conducted April 14 and 15 at the Hotel Roanoke, Roanoke, Virginia. An interesting scientific program has been developed.

### Physicians Recently Licensed in Tennessee

Andrew S. Wachtel, Oak Ridge  
Sam H. Patterson, Murfreesboro  
Ransey G. Cole, Birmingham, Ala.  
Norman G. Lawyer, Memphis  
Hobert M. Hampton, Alcoa  
Ronald E. Eith, Indianapolis, Ind.  
Roy L. Seals, Shreveport, La.  
Norman Taube, Memphis  
Jack O. Richmond, Memphis  
Charles R. Hughes, Nashville  
Robert M. Johnson, Nashville  
William C. McAfee, Memphis

Robert C. Owen, Nashville  
John S. Johnson, Nashville  
Henry M. Labiche, Jr., Memphis  
Rufus J. Freeman, Nashville  
William H. Moshier, Indianapolis, Ind.  
Henry M. Wadsworth, Jr., Memphis  
Phillip Gordon, New Haven, Conn.  
Spencer G. McClary, III, Etowah  
Ralph D. Rehm, Memphis  
Joseph W. Scobey, Nashville  
George S. Knapp, III, Memphis  
Charles T. McCullough, Jr., Nashville  
Donald L. LeQuire, Maryville  
James W. White, Roanoke, Va.  
David S. Johnston, Knoxville  
Wm. B. Hopson, Jr., Memphis  
Bradford E. Mutchler, Memphis  
George V. Roberson, Memphis  
Woody G. Burrow, Portsmouth, Va.  
William R. Barbee, Memphis  
Ringland S. Murray, Chattanooga  
Nile R. Clark, Broken Arrow, Okla.  
Arthur K. Waltzer, Nashville

### Louisville Heart Association

The Heart Association of Louisville and the University of Louisville School of Medicine will hold the Eighth Annual Symposium on Cardiovascular Diseases in Louisville, Kentucky, at Brown Hotel Roof Garden on March 28 and 29, 1962. Registration for this meeting is free and members of the Tennessee State Medical Association are cordially invited to attend.

### Sectional Meeting—American College of Surgeons

The American College of Surgeons will hold a sectional meeting, March 26-28 at the Peabody Hotel in Memphis. All members of the medical profession are invited.

Dr. Harwell Wilson, professor and chairman of the department of surgery at the University of Tennessee College of Medicine is in charge of arrangements. Guest speakers will include: Dr. Robert M. Zollinger of Columbus, Ohio, president of the organization; Dr. Michael E. DeBakey of Houston, Texas; Dr. Alton Ochsner of New Orleans; Dr. Charles A. Hufnagel of Washington; Dr. I. S. Ravdin of Philadelphia; and Dr. Warren H. Cole, Chicago.

Subjects to be discussed during the three-day sessions include diseases of the gastrointestinal tract, jaundice, drugs as adjunct to surgery, and endocrine influence on cancer growth.



## PLACEMENT SERVICE

*The Placement Service of the Tennessee State Medical Association is designed to assist doctors and communities to get together. Further information and contacts to both physicians and communities are available from the Public Service Office, 112 Louise Avenue, Nashville 5, Tennessee.*

### Locations Wanted

A 25 year old physician would like to establish general practice in any Tennessee community of 10,000 plus. Interested in either clinical or associate practice. Graduate University of Tennessee; married; Baptist; Tennessee license. Available July 1962. LW-385

A 31 year old surgeon, graduate of the University of Virginia, would like clinical, assistant, group or associate practice in east or middle Tennessee town of 10,000 to 50,000. One year medical residency; three years surgical residency; married; Protestant; available fall of 1962. LW-399

A 32 year old general Surgeon interested in associating with another physician in middle or west Tennessee community of 10,000 plus. Board certified; residency training; married; Protestant; graduate St. Louis University. Available immediately. LW-406

A 33 year old Ob-Gyn physician, presently in the service, would like to establish associate practice with another physician in Tennessee community of 25,000 plus. Graduate University of Tennessee; married; three years residency; Tennessee license. Available almost immediately. LW-414

A 33 year old General Practitioner would like to establish either partnership or solo practice in any east Tennessee community. Graduate University of Texas School of Medicine; married; Protestant; available within 30 days. LW-416

A 26 year old Internist, with two years residency (plus one year residency in pediatrics) would like clinical, assistant or associate practice in any size community anywhere in Tennessee. Graduate University of Michigan; married; available July 1962. LW-419

A 30 year old Pediatrician would like to establish either assistant, associate or solo practice in middle or west Tennessee community of 5,000 plus. Married; Baptist; graduate Vanderbilt University School of Medicine. Available August 1962. LW-420

A 32 year old Internist, Board qualified, would like clinical or associate practice in east or middle Tennessee community of any size. Married; Protestant; graduate University of Pittsburgh. Available July 1962. LW-427

A 34 year old physician, graduate of the University of Tennessee, Part I American Board Internal Medicine, with four years residency, would like clinical, assistant, teaching, or associate practice in west Tennessee community of 100,000 plus. Married; protestant; available August 1962. LW-438

A 33 year old Anesthesiologist, graduate of the University of Oklahoma, would like to establish clinical practice in any community in Tennessee of 50,000 or over. Married; Presbyterian; available September 1962. LW-439

### Physicians Wanted

Physician in east Tennessee town of 30,000 would like associate for general practice; some surgical training desired. Office space and equipment provided. PW-127

A small southern community in need of a general practitioner. No other physician in area. Hospital within 15 miles. Near large industrial area. Large local trade. Good location for interested physician. PW-142

Southern Tennessee community of slightly over 500 in need of general practitioner. Trade area much larger. No other physician in community. Office space and some equipment available. PW-147

Physician with experience in general practice and Ob (with some surgery), needed in middle Tennessee community of 12,000 to assist in large clinic. Will furnish office space, utilities and telephone. Age 30-45. Associate or assistant status. PW-158

A physician in east Tennessee town with very large trade area would like an associate for general practice. New, unused, fully equipped 22 room office only 100 feet from lake. Hospital in area. One years internship required. PW-166

Well established, prosperous community immediately adjacent to large city in need of general practitioner to establish solo or clinical practice. PW-168

FOR IMMEDIATE SALE: a fifteen year lucrative medical practice and new, modern, centrally heated-air conditioned office in uptown location, with laboratory and X-ray, in middle Tennessee town of 10,000, trade area 25,000. Financing can be easily arranged. Owner retiring from private practice. Excellent opportunity. PW-174

General practitioner in middle Tennessee town of 1,200 (trade area over 8,000) would like an associate with at least 2 years residency in general surgery, and not over 45 years of age. Good schools; near excellent recreational facilities; housing and office space adequate; some office equipment available. PW-175

Associate Ob-Gyn desired by physician in east Tennessee town of 25,000. Office space and equipment available. Requirements: three years residency, one years internship, prefer physician just beginning practice. PW-176

Small northern Tennessee town in great need of physician. Approved for Sears-Roebuck Foundation assistance. No other physician in community. Medical economic survey report available upon request. PW-177

## The Effects of Prolonged Exposure of The Mucosa of The Ileocecum To Gastric Chyme\*

DUNCAN A. KILLEN, M.D., PANAGIOTIS N. SYMBAS, M.D.  
and H. WILLIAM SCOTT, JR., M.D., Nashville, Tenn.

*Though it is feasible to interpose the ileocecum between the stomach and duodenum experimentally for sphincteric control, chronic peptic ulceration occurs in the interposed mucosa from prolonged exposure to normal gastric secretion.*

Esophagogastric and gastroduodenal interposition of a segment of small bowel or colon in order to bypass or replace a portion of the esophagus or stomach has proven feasible.<sup>5, 9, 12, 16, 17</sup> The ileocecum has been similarly utilized in an attempt to establish a sphincteric or valvular function in the interposed bowel segment.<sup>6, 11</sup> In certain interposition procedures the mucosa of the transposed segment of bowel is exposed continuously to the acid secretions of the stomach. The effect of prolonged exposure of the mucosa of the ileocecal region of the bowel to gastric chyme has been studied in the dog and the results obtained form the basis for this report.

### Method

Excision of the pylorus with preservation of the distal gastric antrum and the first portion of the duodenum was performed in a group of adult mongrel dogs. Gastro-

duodenal continuity was re-established by the isoperistaltic interposition of a 4 to 5 cm. segment of the ileocecal region of the bowel.<sup>6</sup> Care was taken to preserve the neurovascular integrity of the transposed ileocecal sphincter. The animals were observed over a prolonged postoperative period during which time certain physiologic studies (previously reported) were performed.<sup>6</sup>

At the end of a two year period the animals were sacrificed and autopsied. Gross and histologic studies of the transposed ileocecum were performed. Microscopic sections of the gastric antrum, ileocecum (ileal, colic, and cecal appendage portions), and duodenum were prepared using standard hematoxylin and eosin staining techniques. Additional sections were taken in areas of mucosal ulceration.

### Results

A total of 5 animals were prepared and observed as described. Each animal maintained a good nutritional state and appeared to be healthy at the time of sacrifice two years after operation.

There was no evidence of chronic stomal obstruction or stricture at suture lines in any animal (Fig. 1). Examination of the interposed segment of bowel revealed a chronic appearing, superficial, mucosal ulcer of 5 to 12 mm. diameter in 4 animals (Figs. 2-5). The ulcer was situated in the ileal portion of the ileocecum in 3 animals and in the colic portion in one animal. There was no evidence of a previous perforation of the ulcer in any animal. In no instance was an ulcer found in the mucosa

\*From the S. R. Light Laboratory for Surgical Research, Department of Surgery, Vanderbilt University School of Medicine, Nashville, Tenn.



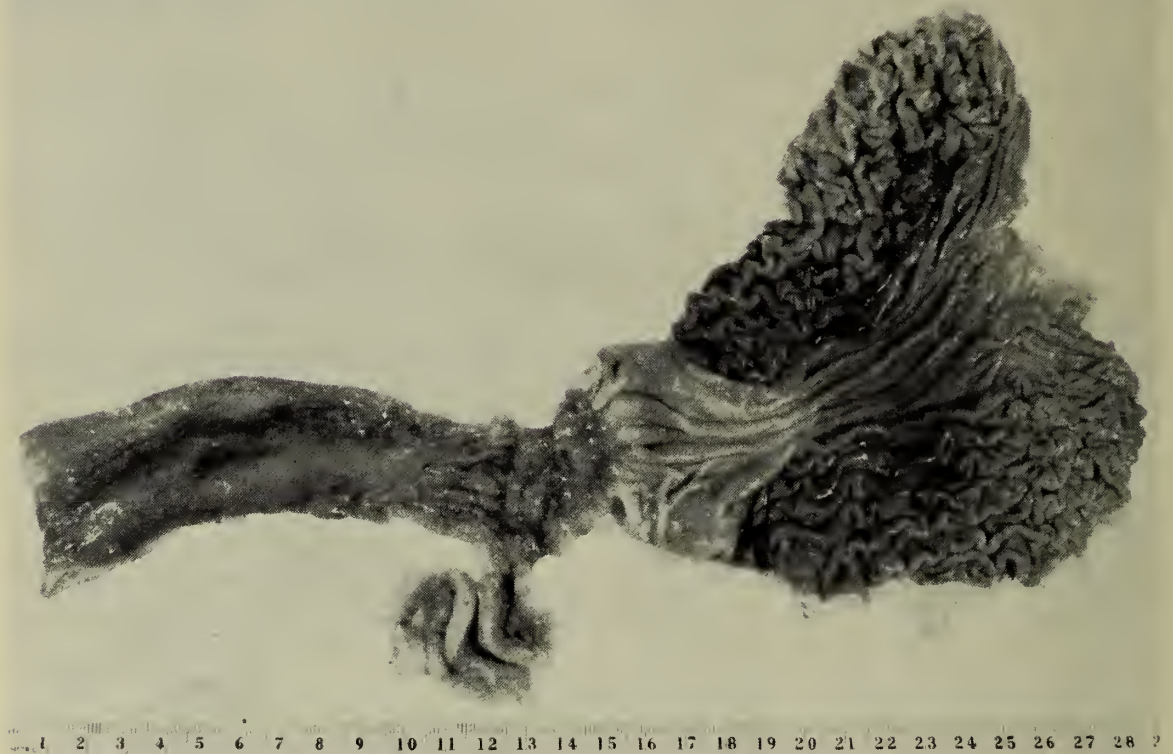


FIG. 1. The gross appearance of the mucosal surface of opened stomach, transposed ileocecum, and duodenum (See Fig. 2).

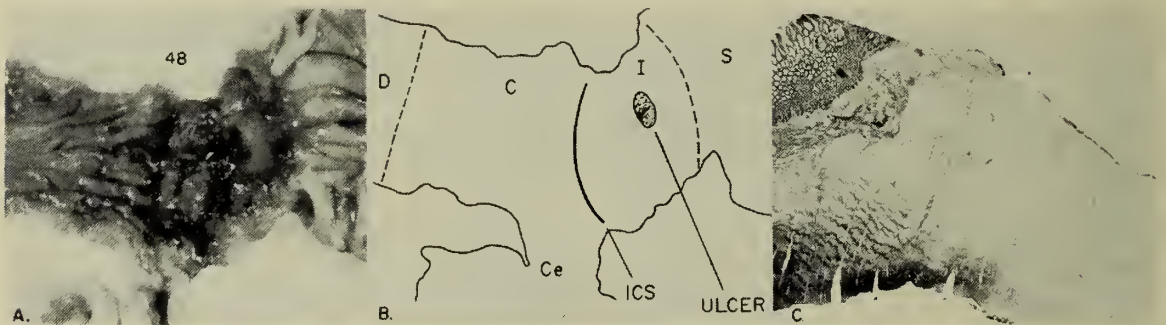


FIG. 2. Transposed ileocecum after 2 years of exposure to gastric chyme. (A.) Photograph of the transposed segment of bowel. Note the 10 x 5 mm. ulcer in the ileal portion. (B.) Artist's drawing of A showing duodenum (D), colon (C), cecal appendage (Ce), ileocecal sphincter (ICS), ileum (I), and stomach (S). (C.) Low power photomicrograph of a histologic section taken through the edge of the ulcer.

of the stomach, cecal appendage or duodenum.

Histologic studies of sections of the gastric antrum, cecal appendage, and duodenum were normal. Sections taken from the ulcerated areas revealed loss of mucosa and submucosa and an ulcer base which consisted of chronic inflammatory tissue and fibrosis (Figs. 2-5). In no instance did the

ulcer penetrate beyond the muscularis. There were no chronic inflammatory changes in the wall of the ileocecum except those observed in the vicinity of the mucosal ulcers.

#### Discussion

The tolerance of small and large bowel mucosa to the ulcerogenic properties of gas-

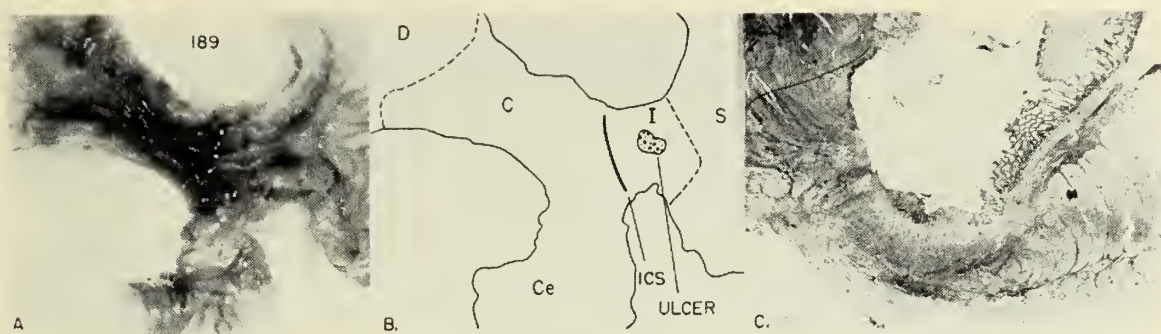


FIG. 3. Transposed ileocecum after 2 years of exposure to gastric chyme. (A.) Photograph of the transposed segment of bowel. Note the 8 x 6 mm. ulcer in the ileal portion. (B.) Artist's drawing of A showing duodenum (D), colon (C), cecal appendage (Ce), ileocecal sphincter (ICS), ileum (I), and stomach (S). (C.) Low power photomicrograph of a histologic section taken through the edge of the ulcer.

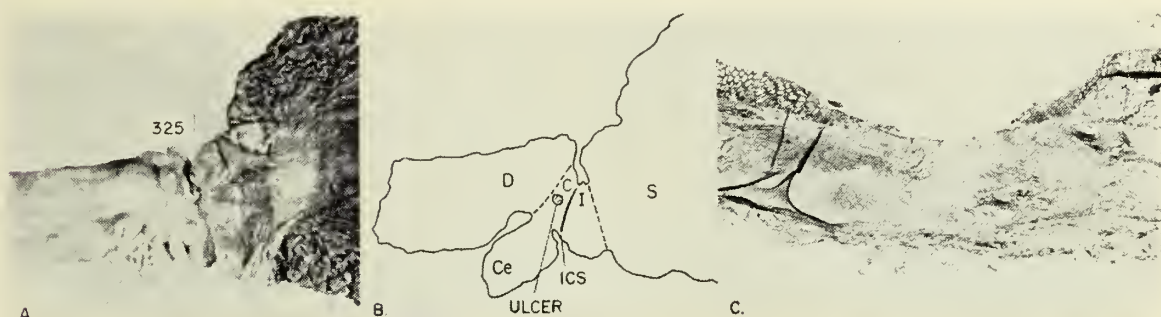


FIG. 4. Transposed ileocecum after 2 years of exposure to gastric chyme. (A.) Photograph of the transposed segment of bowel. Note the 5 x 5 mm. ulcer in the colonic portion. (B.) Artist's drawing of A showing duodenum (D), colon (C), cecal appendage (Ce), ileocecal sphincter (ICS), ileum (I), and stomach (S). (C.) Low power photomicrograph of a histologic section taken through the base of the ulcer. Note close proximity of the ulcer to duodenal mucosa.

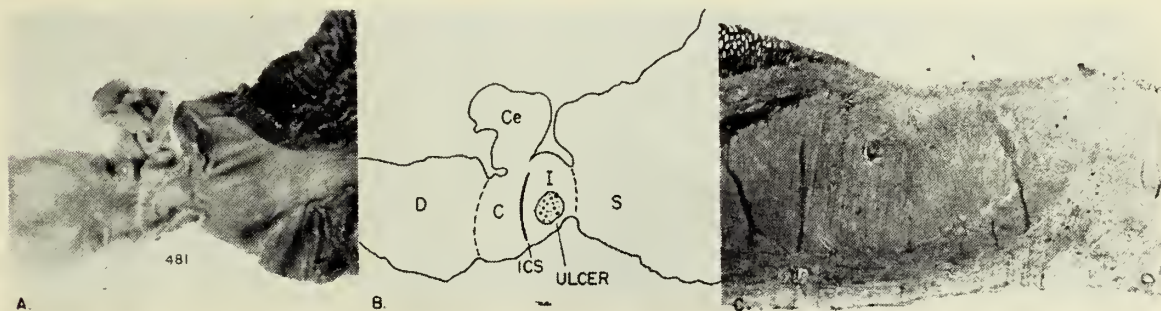


FIG. 5. Transposed ileocecum after 2 years of exposure to gastric chyme. (A.) Photograph of the transposed segment of bowel. Note the 12 x 10 mm. ulcer in the ileal portion. (B.) Artist's drawing of A showing duodenum (D), colon (C), cecal appendage (Ce), ileocecal sphincter (ICS), ileum (I), and stomach (S). (C.) Low power photomicrograph of histologic section taken through edge of ulcer. Note retained island of mucosa in the ulcer base.

tric secretions has been studied by others. Dragstedt and Vaughn<sup>1</sup> showed that implantation of a patch of small bowel or colon into the stomach of the dog in such a way that the mucosa is bathed by the gastric contents did not produce peptic ulceration. Similar gastric implantation of a patch of jejunum resulted in ulceration of the transplanted mucosa only when the implant was along the lesser curvature and

then only in a low incidence.<sup>1,10</sup> Sircus<sup>14</sup> found that in the dog there was peptic ulceration of a segment of colon when it was interposed between the body and antrum of the stomach. It has also been shown that histamine stimulation of gastric secretion in dogs which have undergone establishment of isoperistaltic bypass of the cardia with a jejunal, colonic or ileocecal segment of bowel produces occasional ulceration of the



transposed segment; however, the gastric and duodenal mucosae were much more sensitive to this ulcerogenic regimen than the mucosa of the transposed bowel segment.<sup>2,7,11,15</sup> On the contrary, Silberman and associates<sup>13</sup> found that in the dog the mucosa of a segment of ileum interposed between the first and second portions of the duodenum was more susceptible to peptic ulceration than the duodenal mucosa. Gastric implantation of a pedicled jejunal patch in patients suffering from peptic ulcer resulted in ulceration of the jejunal transplant in 3 of 11 patients.<sup>8</sup> In each study cited the transposed mucosa was subjected to either the normal amount or increased amounts of gastric acid.

Clinical experiences with the interposition of a segment of jejunum or colon between the gastric remnant and the duodenum following gastric resection have apparently shown no tendency of the transposed mucosa to ulcerate.<sup>5,9,12,16,17</sup> However, postoperative examination of the gastric secretions in these patients have by and large revealed achlorhydria or hypochlorhydria.

The ulcers demonstrated at autopsy in the present study were apparently of low virulence. Pathologically they were chronic indolent ulcers, yet in no animal was there evidence of malnutrition, gastrointestinal hemorrhage, or perforation of the ulcer during the two year period of observation. It is interesting that three of the four ulcers demonstrated were in the ileal portion of the ileocecum. Admittedly the number of animals is small but the distribution of the ulcers may be interpreted to suggest that colonic mucosa is more resistant than ileal mucosa to peptic ulceration. It is more likely, however, that the alkaline colonic and duodenal secretions continually reflux into the transposed segment as far as the ileocecal valve.<sup>13</sup> The work of Dillard and Merendino<sup>3</sup> revealed a similar susceptibility of the mucosa of all levels of the intestine to peptic ulceration and emphasized the importance of the buffering action of the duodenal chyme in the prevention of peptic ulcers.

In the present study gastric acid secretion is thought to have been normal. The vagus nerves, gastric fundus, and gastric antrum were intact and the sphincteric function of

the ileocecum maintained a nearly normal gastric emptying mechanism.<sup>6</sup> There was chronic peptic ulceration of the mucosa of the transposed ileocecum in the majority of the animals. It seems likely that similar ulceration would occur in man if ileal or colonic mucosa were subjected to continuous contact with normal gastric secretions. However, in instances where gastric acid production is abolished or greatly diminished (by vagotomy, gastric resection, etc.) ulceration of the mucosa of an interposed ileocecal segment would not be anticipated.

### Conclusions

(1.) The isoperistaltic interposition of the ileocecum between the stomach and the duodenum in order to obtain sphincteric control of gastric emptying following ablation of the pylorus is feasible, and late follow-up in dogs undergoing such a procedure reveals that there is good nutritional maintenance.

(2.) There are chronic indolent peptic ulcerations of the mucosa, particularly the ileal mucosa, of the interposed ileocecum when it is exposed over a prolonged period to normal gastric secretions.

### References

1. DeTakats, G., and Mann, F.C.: The Effect on the Jejunal Mucosa of Transplantation to the Lesser Curvature of the Stomach, *Ann. Surg.* 85: 698, 1927.
2. Dillard, D. H., and Merendino, K. A.: Experiences with the Interposed Jejunal Segment Operation Combined with Adjunct Procedures in the Prevention of Esophagitis, *Surg. Forum* 5:323, 1955.
3. Dillard, D. H., and Merendino, K. A.: New Studies in the Dog Supporting the Concept of Equal Resistance of Various Levels of the Intestinal Tract to Acid-Peptic Digestion, *Surg. Gynec. & Obst.* 103:289, 1956.
4. Dragstedt, L. R., and Vaughn, A. M.: Gastric Ulcer Studies, *Arch. Surg.* 8:791, 1924.
5. Henley, F. A.: Gastrectomy with Replacement: A Preliminary Communication, *Brit. J. Surg.* 40:118, 1952.
6. Killen, D. A., Symbas, P. N., Burrus, G., and Scott, H. W., Jr.: Use of the Transposed Ileocecal Valve for Sphincteric Control of Gastric Emptying after Ablation of the Pylorus, *Surgery* 48:838, 1960.
7. Merendino, K. A., and Dillard, D. H.: The Concept of Sphincter Substitution by an Interposed Jejunal Segment for Anatomic and Physiologic Abnormalities at the Esophagogastric Junction, *Ann. Surg.* 142:486, 1955.

8. Moore, S. W.: Effects of Pedicled Grafts of Jejunum in the Wall of the Stomach: Long Term Follow Up Study, *Ann. Surg.* 144:152, 1956.
9. Moroney, J.: Colonic Replacement of the Stomach, *Lancet* 1:993, 1951.
10. Morton, C. B.: Observations on Peptic Ulcer: IV. Patch Transplants of Jejunum in the Stomach, *Ann. Surg.* 85:879, 1927.
11. Najarian, J. S., Murray, D. H., Jr., Buster, C. D., and Grimes, O. F.: Utilization of the Ileocecal Valve as a Substitute for the "Cardio-Esophageal Sphincter," *Surg. Forum* 7:344, 1957.
12. Poth, E. J.: The Dumping Syndrome and its Surgical Treatment, *Am. Surgeon* 23:1097, 1957.
13. Silbermann, O. H., Williams, H. T. G., Pisesky, W., and Harrison, R. C.: Experimental Production of Peptic Ulceration, *Surg. Forum* 9:455, 1959.
14. Sircus, W.: The Resistance to Digestion of the Stomach-Implanted Dog's Colon, *Brit. J. Surg.* 43:429, 1956.
15. Thomas, G. I., and Merendino, K. A.: An Evaluation in the Dog of Cardiac Sphincter Substitution by Interposed Colon in the Presence of Vagotomy and Finney Pyloroplasty, *Surgery* 41:993, 1957.
16. Thomas, G. I., and Merendino, K. A.: Jejunal Interposition Operation—Analysis of Thirty-Three Clinical Cases, *J.A.M.A.* 168:1759, 1958.
17. Watkins, D. H., and Wittenstein, G.: Subtotal Gastric Resection with Colon Substitution, *A.M.A. Arch. Surg.* 70:843, 1955.

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### CHEMOTHERAPY IN TUBERCULOSIS

I have a recent report by Dr. William S. Middleton, medical director of the Veterans Administration, that the VA has closed down 11 tuberculosis hospitals in 10 years. In 1950 there were 21 hospitals with 15,690 beds. Today there are only 10 TB hospitals with 9,037 beds. . . . The institutions for tubercular veterans maintained by taxpayers have been cut by more than 50%, with all that means in savings to all of us. And the primary reason for this decline in the cost of medical care for tuberculosis is drugs. Dr. Middleton attributes the VA record to new and specific drugs in TB chemotherapy produced by our ethical drug industry.—Austin Smith, M.D., President, Pharmaceutical Manufacturers Association.



The first section of the author's review of the use of chemotherapeutic agents in the treatment of malignancy appeared in last month's Journal. Here he completes the review.

# Rational Use Of Cancer Chemotherapeutic Agents

## PART II: STEROIDS AND MISCELLANEOUS AGENTS

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In Part I of this paper, the use of alkylating agents and antimetabolites was discussed. This communication will concern itself with the discussion of the place of corticosteroids, adrenocorticotrophin (ACTH), and miscellaneous agents in the management of patients with malignant disorders. Corticosteroids and adrenocorticotrophin can often be used concomitantly with other cancer chemotherapeutic agents or they may be utilized between courses of therapy with alkylating agents or antimetabolites.

### Corticosteroids

Corticosteroids produce lymphocytosis, regression of lymphatic tissue mass, and inhibit growth of some mesenchymal tissues. It is, therefore, not unexpected that therapeutic benefit was anticipated from these agents in the treatment of lymphomas and leukemias.

These agents will induce short-lived remissions in approximately 70% of children ill with acute leukemia. These remissions can be so complete that all physical and laboratory stigmas of the disease are abolished for varying periods of time. Recently, reports on their use in combination with antimetabolites, particularly acute leukemia in adults, have appeared. In general, corticosteroids and adrenocorticotrophin are indicated in those patients who are critically ill, inasmuch as it often requires as much as two or three weeks to induce a remission with antimetabolites. Often one is able to induce a remission with these agents and then shift the patient to the appropriate antimetabolite. Prednisone and prednisolone have been widely used in these dis-

orders. The dosage ranges from 20 to 100 mg. per day. Usually a fairly large dosage is used initially, and this is gradually reduced to as low a level as is consistent with clinical and hematologic suppression of disease activity. Metabolic and inflammatory complications, of course, must be kept in mind. With the dosages employed in these disorders, diabetes and arterial hypertension may occasionally become problems, particularly in elderly patients. Corticosteroids and adrenocorticotrophin appear to be equally efficacious in comparable physiologic dosage, the corticosteroids having the advantage in that they can be administered by mouth and, in general, are attended by fewer complications. These agents are not as uniformly helpful in the lymphomas as is the case with acute leukemias.

Many patients with lymphosarcoma, particularly those with fever and other systemic manifestations, benefit from corticosteroids. Patients with hemolytic anemia secondary to one of the lymphomatous disorders often improve strikingly from the use of these agents. They often subdue bleeding tendencies in thrombocytopenic states due to the leukemias, lymphomas, disseminate metastatic disease, and drug toxicity. This salutary effect may be manifest even in the absence of any favorable influence on the thrombocyte count. The vascular integrity is believed to be enhanced in some occult fashion.<sup>1-3</sup>

Patients with disseminated mammary cancer may benefit from corticosteroids after other forms of therapy have been exhausted. Cerebral metastases have been observed to show striking objective regression and commensurate subjective improvement while receiving adrenal steroids. Prednisone and prednisolone are given in

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doses of 100 to 125 mg. daily. The dosage in responsive patients may be gradually reduced after one month to 20 to 50 mg. daily. Transient palliation may be given almost any patient with disseminated cancer by these agents. Their potential benefits must, of course, be weighed against the complications which may attend their use. The dosage required is usually fairly large. It should be remembered that they are antipyretic, anti-inflammatory, and analgesic in their physiologic effects.

Several therapeutic approaches are possible in the patient with metastatic mammary cancer. Approximately 50% of mammary cancers are estrogen-dependent. For this reason, premenopausal patients and patients less than four years beyond the menopause should have castration. Those who benefit from oophorectomy may benefit from bilateral adrenalectomy. Patients in this age group may benefit from testosterone propionate in a dosage of 300 to 600 mg. per week. Comparable physiologic dosages of oral preparations are equally efficacious. In general, estrogenic substances are not given to these patients unless they are four or more years postmenopausal. Improvement effected by these hormonal agents may last three to twelve months. Local manifestations may be controlled in varying degrees by local radiation therapy. Nitrogen mustard benefits some of these patients. It should not be given, however, until attempts to control the disease with other more commonly employed agents have failed. Intracavitary nitrogen mustard helps 30 to 40% of patients having pleural effusion. If one wishes to avoid the systemic effects of nitrogen mustard or its congeners, or the intensification of existing hematopoietic depression from other forms of therapy, radioactive gold may be preferable in treating intracavitary disease. Mention has already been made of the use of 6-mercaptopurine in these patients. Finally, corticosteroids may be given for purely palliative effects, particularly in patients who are diffusely symptomatic or, as previously indicated, in those with cerebral metastases. They are usually used in a terminal setting.

Carcinoma of the male breast is often androgen-dependent. The treatment is, therefore, similar to that of carcinoma of

the prostate, i.e., orchidectomy and the administration of estrogenic substances. Treves,<sup>4</sup> on the basis of his experience at Memorial Hospital in New York, concluded that orchidectomy was the initial procedure of choice, and that corticosteroids were superior to estrogenic substances in those patients who had relapsed after orchidectomy. He implies that the place of adrenalectomy and hypophysectomy in these patients has not yet been established. There are many who still prefer to treat these patients with orchidectomy plus estrogenic substances, either concomitantly or in sequence.

#### Miscellaneous Agents and Lesions

Urethane is of some benefit to patients with multiple myeloma, and is generally conceded to be preferable to stilbamidine and hydroxystilbamidine. It is best given in a dosage of 2 to 4 Gm. by mouth in a 10% aqueous solution by way of a straw. If this is not tolerated, then the enteric-coated preparation can be employed. Strictly local manifestations can often be controlled for varying periods of time symptomatically with local radiation therapy. Many patients benefit symptomatically from the use of corticosteroids. Cyclophosphamide (Cytoxan) is being used some in multiple myeloma, but an accurate estimate of its usefulness in this disorder will have to await more extended use.

Some favorable reports on the use of actinomycin D and cyclophosphamide in the treatment of disseminated rhabdomyosarcoma in children have appeared. This agent has also produced objective regression of pulmonary metastases from Wilm's tumor. Pinkel and Pickren<sup>5</sup> recommend postoperative treatment with radiation and chemotherapy in patients with rhabdomyosarcoma in whom the tumor is incompletely removed.

The Japanese antibiotic, mitomycin C, has exhibited therapeutic benefit in patients with epithelial tumors, Hodgkin's disease, lymphosarcoma, chronic leukemias, and rhabdomyosarcoma. Its toxicity, however, limits its usefulness in these disorders, and it appears at present that other less toxic agents should first be employed.

Metastases from testicular teratocarcinoma have been observed to show striking



objective regression in patients receiving nitrofurazone, but unfortunately these patients often develop incapacitating peripheral neuropathies.

Anaplastic nasopharyngeal carcinomas and seminomas may occasionally prove to be sensitive to nitrogen mustard.

Recent reports indicate that retinoblastoma is best treated with a combination of radiotherapy and TEM.

Diamond<sup>3</sup> has advised sequential treatment of patients with neuroblastoma with nitrogen mustard, x-ray therapy, and amethopterin (Methotrexate). Nitrogen mustard is given in a dosage of 0.4 mg. per kilogram followed by x-ray therapy. This is followed by amethopterin in a dosage of 2.5 mg. daily in courses extending over three to five weeks with rest periods of about two weeks between courses.

The British experience with vitamin B<sub>12</sub> in the treatment of neuroblastoma is interesting. Bodian reports on a series of 42 children treated with vitamin B<sub>12</sub> and contrasts the course of the disease in these patients with that of an untreated group of 58 cases. Of the 42 treated patients, 17 manifested their disease in infancy and all except 4 had a clinical remission. This, of course, is the age group in which the outlook is best regardless of the therapeutic modality employed. Remissions were maintained from one to eight years in 13. One patient had complete regression but died of poliomyelitis. Remission was temporary in 3 others. It was their conclusion that it "enhances a biologic tendency of the tumor to regress," and that this was most pronounced in those patients in the first year of life. It was pointed out that spontaneous regression occasionally occurs, but that regression was much more frequent in the treated group. The exact mechanism of action of vitamin B<sub>12</sub> in this disorder is not known.

Various other combinations of chemotherapeutic agents are under study, but available information with respect to this approach is not very conclusive.

Melanosarcoma is one of the most discouraging of malignant neoplasms. Only sporadic success at palliation with TEM and Thio-TEPA have been reported. The other cancer chemotherapeutic agents are notori-

ously ineffectual. An occasional patient will display some response to radiation therapy.

The presence of hepatic and pulmonary metastatic disease at once connotes a palliative clinical setting. In the case of pulmonary metastatic disease, the presence of intractable cough, hemoptysis, lung abscess, or obstructive pneumonitis are considered indications for radiation therapy or alkylating agents, or both. Chemotherapeutic agents, in general, are a little more effective in both primary and secondary pulmonary malignancies, because the concentration of the agent is greater than is the case when the same disease is more peripherally situated.

In general, hepatic metastatic disease is quite resistant to the usual modalities of treatment. Even lymphomatous infiltrates are decidedly less responsive than when the disease is peripherally situated.

Creech and associates<sup>4</sup> have employed isolation perfusion technics rather extensively in the treatment of certain neoplastic lesions. This is accomplished with a pump oxygenator which permits a high oxygen concentration in the tumor bed, which potentiates the cancericidal effects of the various agents used. It also permits a much higher concentration of the agents used without toxic systemic effects. Perfusion technics have been developed for the treatment of lesions of the extremities, pelvis, breast, lungs, brain, and oropharynx. Lesions of the extremities would appear to be most amenable to this approach. Dramatic objective regression of lesions has been observed. It appears that this approach will become a part of the palliative armamentarium of the clinician in select cases.

Recently, Eli Lilly and Company have introduced a new cancer chemotherapeutic agent, vinblastine sulfate (Velban). This agent is extracted from a flowering herb, *vinea rosea* Linn., which is commonly recognized as the periwinkle. Its use is advised in the treatment of Hodgkin's disease and in the treatment of choriocarcinoma resistant to other forms of therapy. The dosage varies from 0.1 to 0.2 mg. per kg. of body weight. Treatment is best initiated with a single dose of 0.1 mg. per kg. of body weight. If the patient tolerates this dosage well and without undue leukopenic re-

sponse, then subsequent doses of 0.15 to 0.2 mg./kg. on two consecutive days may be given. The size of the dose and the frequency of the intravenous injections are determined by the leukopenic and oncolytic effects. Occasional epilation is the most serious side effect. Other side effects include nausea, malaise, temporary mental depression, and vomiting. Side effects, however, have been conspicuously infrequent in my experience. The ultimate place of this agent in our chemotherapeutic armamentarium remains to be determined.

### Summary and Conclusions

The role of corticosteroids and adrenocorticotrophin is discussed. A vigilant watch for serious side effects and for absolute contraindications to these agents should be maintained.

Treatment of mammary cancer of both the male and female breast is discussed. Miscellaneous cancer therapeutic agents are discussed.

Again it is emphasized that these agents should not be used except in patients who are beyond curative therapy by surgical and radiotherapeutic approaches.

Needless to say, cancer chemotherapeutic

agents should be integrated into the total care program of the patient. If possible, one agent should be used at a time in order to more accurately assess therapeutic response, although there are a few situations in which a combination of agents may prove to be desirable from the outset.

Finally, available evidence suggests that cancer is a group of related disorders, probably due to different etiologic agents. For this reason no single universally restraining agent is apt to be found.

### References

1. Gumport, S. L., et al.: The Treatment of Advanced Malignant Melanoma with Triethylene Thiophosphoramide, *Ann. Surg.* 147:232, 1958.
2. Karnofsky, David A.: Chemotherapy of Cancer, *Modern Med.* p. 83, (Dec.) 1958.
3. Diamond, J. J.: Medical Management of Cancer, Gruene Straton, 1958.
4. Treves, N.: The Treatment of Cancer of the Male Breast, Especially Inoperable, by Ablative Surgery and the Hormone Therapy with Estrogens and Corticosteroids: An Analysis of 42 Patients, *Acta Un. Int. Cancer* 15:1169, 1959.
5. Pinkel, D., and Pickren, J.: Rhabdomyosarcoma in Children, *J.A.M.A.* 175:293, 1961.
6. Creech, O., Jr., Krentz, E. T., Ryan, R. F., Reemtsma, K., Winblad, J. N., and Elliott, J. L.: The Treatment of Cancer by Perfusion, *A.M.A. Arch. Surg.* 79:963, 1959.

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**SOCIAL SECURITY** (Old Age Survivors' Insurance)—The tax paid by employers and employees goes into a trust fund. The fund now amounts to more than 21 billion dollars, but more than 20 billion of the "trust fund" is represented by Govt. securities. In other words, OASI funds have been used by Uncle Sam for general expenses, and the 20 billion is a part of the 298 billion national debt. The interest on the debt is approaching 10 billion annually.



## CASE REPORT

### Rupture of the Diaphragm Associated with Multiple Injuries

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The mounting death toll on the highways of this country has given physicians the dubious opportunity of being exposed to, and of treating the crippling results of automobile smash-ups. Major fractures, traumatic amputations, and crushing or puncture wounds of vital organs are frequently seen. These injuries, suffered in automobile accidents, are common in all geographical sections of the country. In addition, each area has injuries suffered which are peculiar to that area because of economic factors, topography of the land, and livelihood of the people. Automation in farm work has brought with it machines which save untold man hours, have helped the economic status of the farmer, but at the same time have opened a new field of injuries. The tractor is just such a machine. As with all other mechanized equipment, if properly handled, it saves the farmer many back-breaking hours. Carelessness, however, elevates the tractor to an instrument of destruction just as lethal as the speeding automobile.

#### Historical Background

The first antemortem diagnosis of dehiscence of the diaphragm in this country is accorded Henry I. Bowditch,<sup>1</sup> who, in 1853, gave an extensive discussion of the condition. Diagnosis was based on five clinical signs, which remain extremely useful:

- (1.) Prominence or immobility of the left hemithorax
- (2.) Displacement of the heart to the right
- (3.) Absent breath sounds in the left chest
- (4.) Abnormal gurgling sounds in the left chest
- (5.) Tympany in the left lower chest on percussion

Bowditch credits Laennec with suggesting that operative reduction of herniated viscera and repair of the rupture should be effected. Ambroise Pare<sup>2</sup> reported two cases

in 1579, in one of which the patient recovered from his initial injury only to have trouble at a later date from the ruptured diaphragm. Walker,<sup>3</sup> in 1899, successfully repaired a laceration of the diaphragm by the abdominal route. It was his suggestion at the time that a transpleural approach be reserved for those cases in which the hernia had been present for a long period of time.

The following case report and discussion illustrates the type of lesions which can occur in a tractor injury. The patient, a middle-aged farmer, had been in poor health for several months. On the day of the accident, however, he decided to mow the fields with his tractor. His farmland, characteristic of many farms in Middle Tennessee, had both flat "bottom land" and "hilly ridge land." He elected to cut on the side of the hill, with the result that for some reason, which he was later unable to explain, the tractor overturned, pinning him beneath it. He suffered a crushing injury which shattered his pelvis, the force being transmitted cephalad, and instead of perforation of the bowel resulting, bilateral dehiscence of the diaphragm occurred.

#### Case History

A 44 year old white man was admitted to the emergency room approximately 4 hours after having suffered a crushing abdominal injury. The patient had been driving a tractor which overturned, striking his abdomen and anterior left lower chest. He remained in the field for about one hour before being found, following which he was taken to the local community hospital. At this time it was noted that he was cool, clammy, and was passing blood by the urethra. The gravity of the situation was promptly and wisely recognized, and after insertion of a Foley catheter and institution of an intravenous infusion, he was transferred to Nashville.

Examination on arrival revealed a well-developed, conscious, pale, white man with a pulse of 140 per min. and tachypnea of 30 per min. Examination of the head and its structures revealed no evidence of cerebral dysfunction. There was contusion of the left lateral chest wall with crepitus and several obviously fractured ribs. There was no instability of the chest cage. Breath sounds were good bilaterally. The abdomen was rigid without distention. Examination of the genitalia revealed an indwelling Foley catheter passing pure blood, but no evidence of penetrating injuries. The extremities showed no evidence of deformities or fractures.

Immediate care consisted of adequate venous cannulae for infusion, and the rapid administra-

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tion of 500 cc. Dextran 6% and 1000 cc. of whole blood. The blood pressure then became obtainable at about 100 systolic and there was evidence of increasing blood volume.

Roentgenograms of the chest, abdomen and pelvis were obtained. There were obvious fractures of the 6th, 7th and 8th ribs in the midaxillary line on the left, with elevation of the left diaphragm, congestion of the lung fields, and a large air pocket under or within the left hemidiaphragm (Fig. 1a).

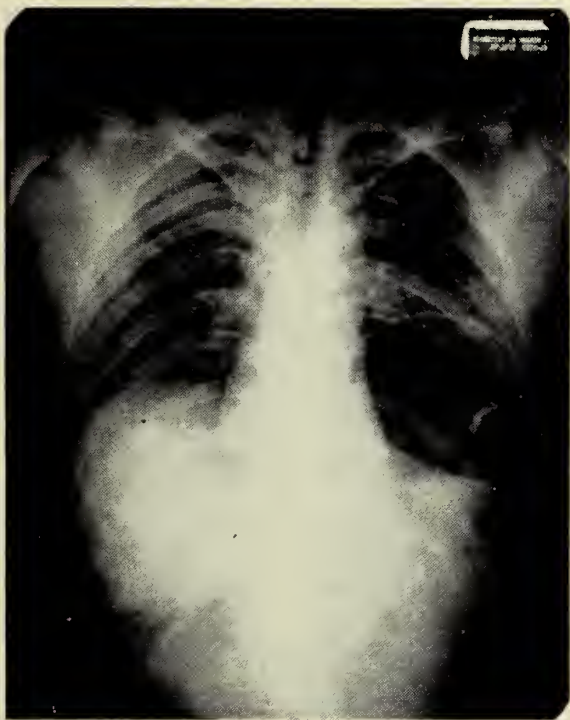


FIG. 1a. Upright chest film revealing large air pocket in the left hemithorax.

Plain film of the abdomen revealed no evidence of free air, but fluid was present, with obliteration of the left psoas shadow. The films of the pelvis revealed rather extensive fractures involving the left wing of the ilium, the inferior and superior ramus of the pubis bilaterally, with a moderate displacement of the fractures.

The possibility of a rupture of the left leaf of the diaphragm was entertained; consequently, a Levin tube was passed into the stomach and a second chest film obtained. This showed no change in the size of the air pocket, with the tube obviously *in situ* in the stomach (Fig. 1b). This was thought to confirm the suspicion of a traumatic diaphragmatic hernia.

Puncture of the bladder by one of the pubic rami was suspected and confirmed by the injection of 20 cc. of 50% Hyopaque via the indwelling catheter. This revealed extravasation into the retroperitoneal area on the right (Fig. 2).

The patient's general condition improved only slightly, however, surgical intervention was deemed necessary to ascertain the true extent of his injuries and reparation of the injured parts.

Two hours following admission, and with ade-



FIG. 1b. Levin tube fails to reduce gastric distension.

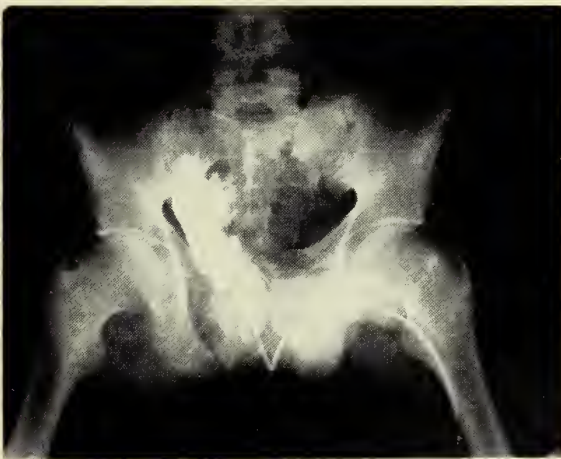


FIG. 2. Pelvic displacement is noted, and with injection of Hyopaque, retroperitoneal extravasation is noted.

quate blood available and three large venous cannulae for infusion, exploration was undertaken with the patient under general endotracheal anesthesia. The abdomen was entered through a xyphoid to pubis midline incision.

Opening of the peritoneum yielded the following obvious findings: 750 to 1000 cc. of blood within the peritoneal cavity, an 8 cm. rent in the inferior medial portion of the left hemidiaphragm, with 30 to 40% of the stomach and a small knuckle of transverse colon herniated into the left chest, and a severely comminuted pubic bone with multiple jagged fragments and complete severance of the bladder from the prostatic urethra. Opening of the bladder revealed a 3 cm.



puncture wound in the right posterior wall just above the trigone. The retroperitoneal area and mesentery of the bowel were filled by a hematoma.

A less obvious finding was a 12 cm. rent in the right hemidiaphragm, discovered when the operator passed his hand over the surface of the liver to determine if injury had occurred. A portion of the liver had passed into this defect, but had not herniated completely.

Reconstruction of the damaged parts consisted of suture of the leaves of the diaphragm with through-and-through interrupted #00 silk sutures. Exploration of the retroperitoneal area to ascertain that the renal and superior and inferior mesenteric arteries had not been injured was carried out, and examination of the iliac arteries and ureters in the pelvic area was accomplished; all vessels were intact. The wound of the bladder was closed with #00 chromic catgut and suprapubic tube inserted. All jagged fragments of bone were removed from around the bladder neck. Several large Penrose drains were placed in the suprapubic space and brought out with the suprapubic tube.

Examination of the bowel revealed no perforations, though extensive mesenteric hematomas were present as mentioned. The spleen miraculously was spared rupture.

The incision was closed in layers with retention sutures. The patient was in excellent condition at the termination of the procedure, having received a total of 12 units of whole blood from the time of injury. No traction was utilized for the pelvic fractures. A tracheostomy to assure a patent, unobstructed airway and ease of tracheo-bronchial toilet was performed.

Portable upright chest film, obtained upon return to the recovery room, revealed a small bilateral pneumothorax, in spite of efforts to aspirate the chest on closure of the diaphragm. A small catheter was inserted in the left 2nd interspace anteriorly, and a larger tube in the 7th interspace laterally on the right. These tubes were removed in 48 to 72 hours respectively.

The patient's condition remained quite stable, with a blood pressure of 120-140 systolic and a pulse rate of about 100. One additional unit of blood was necessary the day following operation, but during the next 9 days no further transfusion was required and the hemogram was within normal range.

The patient's convalescence progressed satisfactorily for the ensuing 10 days. He was maintained on parenteral alimentation, peristalsis was slow returning, but his general condition remained good, with normal temperature, pulse and blood pressure. On the 10th postoperative day he had a normal bowel movement and the Levin tube was removed. Serial chest x-ray films had revealed bilateral pleural effusion, which was controlled with thoracentesis.

On the evening of the 12th day, the patient vomited bright red blood and the Levin tube was re-inserted; transfusion of five units of whole

blood during the ensuing 24 hours was necessary to maintain his hematocrit and vital signs at a normal level. On the evening of the 13th day, abdominal distention became evident, followed shortly by continual hematemesis of fresh blood. During the next 4 hours, seven units of whole blood were given, following which the patient's general condition stabilized and it was felt that hemorrhage had ceased. At the time of the patient's admission, a history of "ulcerated stomach" had been obtained, and, in addition, it was learned that he had been under treatment for 2 months for "hepatitis." It was felt that in view of his recent extensive trauma that conservative management would be preferable. The etiology of the hemorrhage was thought to be on the basis of a stress situation, with activation of the ulcer diathesis. On the afternoon of the 14th day, brisk hemorrhage again ensued and a decision for exploration was made, recognizing the seriousness of the situation.

The previous midline incision was re-opened and immediate examination of the duodenum revealed a posterior wall duodenal ulcer, measuring 5 cm. in diameter, with a branch of the gastroduodenal artery in its base, bleeding briskly. The superior and posterior duodenum were completely eroded, with the head of the pancreas exposed. Bleeding was easily controlled with sutures, but obliteration of the duodenum was necessary to close the penetration. An anticolc gastrojejunostomy with vagotomy was performed. Further exploration at this time revealed no indication of further intraperitoneal or retroperitoneal disease. The entire intestine was markedly distended with blood. Immediately preceding and during the procedure, 11 units of whole blood were infused in an effort to restore blood volume.

The postoperative course was stormy and exact blood replacement was difficult. Twelve hours postoperatively, respiratory difficulty became manifest, associated with hypotension. Pulmonary edema was evident and appropriate steps were taken to combat this, however, the patient continued to do poorly and expired 24 hours after operation; 15 days after his original injury. Permission for autopsy was not obtained.

### Discussion

Traumatic rupture of the diaphragm, although not seen frequently, occurs in cases of severe trauma with enough regularity that the physician treating patients who have been injured should keep it in mind. Carlson, Goebbel, Diveley and Daniel,<sup>1</sup> reviewed the American and British literature from 1946 through 1957, inclusive, and found 90 cases of rupture of the diaphragm related to nonpenetrating injuries. Their own series consisted of 9 cases, in which trauma was of such severity to produce fractures of the bony pelvis and/or lumbar spine in 6.

Grage and MacLean<sup>2</sup> reported a similar series from the University of Minnesota Hospital and Anker Hospital, St. Paul. Twenty-six cases were seen over an 18 year period, with 21 being due to indirect trauma; 5 cases were related to direct penetrating injuries. Twelve patients, in whom blunt trauma was implicated, had associated fractures of the pelvis and/or extremities. Isolated instances of diaphragmatic rupture, for the most part, do not appear in the literature. Many others are never diagnosed due to death without necropsy studies. These two reports and others, however, serve to point up the relationship of severe crushing injuries and dehiscence of the diaphragm.

The occurrence of bilateral dehiscence of the diaphragm is a rarity indeed. A review of the American and British literature reveals 3 cases, 2 of whom were diagnosed ante mortem. Hallinan,<sup>5</sup> in 1940, reported a case diagnosed at autopsy in a man crushed between two trucks. The patient died almost instantly; autopsy was obtained, at which time bilateral diaphragmatic herniae were evident. Metcalf and Seeley,<sup>6</sup> in 1941, reported the case of a man injured 4 years previously, in whom the diagnosis of left traumatic hernia was made. This was surgically corrected only to have the patient expire during the early postoperative period and the rent in the right cupola found at autopsy. The other case, reported in 1955 by Manlove and Baronofsky,<sup>7</sup> was that of a six year old boy who was struck by a truck. There were no other serious injuries evident, except a radiologic diagnosis of free air in the peritoneal cavity. Exploration was undertaken, at which time bilateral dehiscence of the diaphragm was evident. There were no associated injuries of abdominal viscera.

The management of the patient who has suffered extensive injuries to several organ systems can offer a difficult problem indeed. Cerebral contusion and shock, due to extensive blood loss at the site of fractures, or due to splenic rupture, require prompt emergency care. The condition of intraperitoneal organs can be quite perplexing, and, although x-ray studies may help, surgical intervention is generally the only course to follow to determine the extent of injuries.

When the patient herein reported was first seen in the emergency room, it was our initial impression that exploration would be required. We tried to eliminate some of the problems with the aid of x-ray films. Figure 1a shows the presence of a large air pocket beneath the left hemidiaphragm, with elevation of the diaphragm. The possibility of a rupture was entertained, and when with Levin decompression the air pocket failed to change in position, we thought the stomach was incarcerated in the left pleural space (Fig. 1b). This was confirmed at operation. A point that we did not appreciate on the chest film prior to operation was the elevation of the right hemidiaphragm. The cause for this was likewise demonstrated at the time of exploration, with a large rent demonstrated in the right hemidiaphragm. It would have been extremely easy to overlook this injury as the liver tamponaded the defect, and the right upper quadrant appeared innocent enough. A thorough examination of the surface of the liver led to the discovery of a large 12 cm. defect in the inferior, medial portion of the diaphragm.

Repair of the bilateral dehiscence was accomplished with multiple interrupted #00 silk sutures, taking care to include both pleural and peritoneal surfaces in each stitch. Exposure was not a problem, and there was adequate border on all sides of the defects to give a secure closure.

The choice of thoracic or abdominal incisions was not a problem in this patient, as it was necessary to ascertain the extent of intra-abdominal injuries. Figure 2 revealed puncture of the bladder by a spicule of the pubic bone, requiring immediate therapy. The possibility of a ruptured spleen seemed excellent, although this was not proved to be the case. In Manlove's case of bilateral rupture, exploration was undertaken via the abdominal route, with a preoperative diagnosis of ruptured hollow viscus. Thus, in both cases, the bilateral rupture was discovered. In the patient who has been subjected to severe trauma, with associated fractures such as pelvis and /or lumbar spine, the abdominal approach seems the most rational for repair of the diaphragmatic hernia, and correction of any other injuries which might have occurred. Need-



less to say, a bilateral dehiscence would, in all probability, be overlooked with a thoracic approach.

In his approach to the problem in 1899, Walker suggested the thoracic approach be reserved for those cases in which the hernia had been present some time. Little did he realize the extent to which thoracic incisions and surgery would progress, making this approach feasible. A hernia which has been present for more than seven to ten days will most likely have developed adhesions in the pleural space, making dissection from below quite difficult. Such situations would seem to lend themselves to the thoracic approach with extension into a thoraco-abdominal incision if necessary. The situation in which intraperitoneal injury is not a factor can be handily corrected with a thoracic incision.

After successful repair of an unusual lesion, this patient was beset by a problem seen daily in any general hospital. Bleeding duodenal ulcers are best managed by prompt surgical intervention and cessation of hemorrhage before the patient becomes a massive bleeder (more than ten units of whole blood). This philosophy was not strictly adhered to in this situation because of the severity of the man's original injury and because of the possibility that bleeding might be due to diffuse ulcerations which would be impossible to control. The ultimate outcome of the case would lend support to the original philosophy of early intervention in gastrointestinal hemorrhage before massive hemorrhage with irreversible changes ensue.

### Summary and Conclusion

Injuries associated with crushing of the abdominal viscera and fractures of the bony pelvis and/or lumbar spine are most likely to result in dehiscence of the diaphragm.

Such injuries are seen most frequently in automobile accidents, but occur in other injuries and must be considered in evaluating the patient.

Emergency surgical intervention would seem to be the best treatment for diaphragmatic dehiscence. The abdominal approach lends itself to a more thorough exploration to ascertain the exact extent of concomitant injuries.

Bilateral dehiscence of the diaphragm is exceedingly rare, only three cases appearing in the American and British literature.

### References

1. Bowditch, Henry I.: Diaphragmatic Hernia, *Buffalo M.J.* 9:1, and 65, 1853.
2. Pare cited by Theodore B. Grage: Traumatic Rupture of the Diaphragm, *Surgery* 46:669, 1959.
3. Walker, E. W.: Diaphragmatic Hernia, with Report of a Case, *Internat. J. Surg.* 23:257, 1900.
4. Carlson, R. I., Diveley, W. L., Goebbel, W. G., Jr., and Daniel, R. A.: Dehiscence of the Diaphragm Associated with Fractures of the Pelvis or Lumbar Spine Due to Nonpenetrating Wounds of the Chest and Abdomen, *J. Thoracic Surg.* 36:254, 1958.
5. Hallinan, F. J.: Bilateral Rupture of the Diaphragm, *Brit. M. J.* 1:299, 1940.
6. Metcalf, R. F., and Seeley, Sam F.: Bilateral Traumatic Diaphragmatic Hernia, *Am. J. Surg.* 52:502, 1941.
7. Manlove, C. H., and Baronofsky, I. O.: Traumatic Rupture of Both Leaves of Diaphragm, *Surgery* 37:461, 1955.

## CLINICAL NOTES FROM THE TENNESSEE HEART ASSOCIATION

### THE RATIONAL USE OF THE ELECTROCARDIOGRAPH

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Knowledge of diseases of the heart has blossomed along with the increasing laboratory and clinical use of the electrocardiograph. However, like all other tests, the electrocardiogram is capable of giving misleading information; further, accurate information may be misinterpreted. It is the purpose of this paper to briefly review clinical problems which may arise out of the use of this valuable instrument. These fall into three groups, errors due to poor technic, errors due to misinterpretation of the tracings, and errors due to misapplication of the conclusions.

Of these errors, those due to poor technic should be the easiest to avoid and, if present, are frequently the simplest to detect. As long as tracings are taken by humans, however, some errors will remain. An electrocardiogram, to be of diagnostic quality, should be free of artifact, normally standardized and of enough length that abnormalities of rhythm may be interpreted.

Inadequate preparation of electrode sites may lower the voltage recorded even though standardization appears normal. Further, 60 cycle and other artifact may become apparent. Only the unusual technician will take the time to rub electrode paste or lotion into the skin rather than to merely apply it. Care must be taken in the preparation of electrode sites on the chest that there is no overlapping of areas. Electrodes must be applied firmly.

Limb lead patterns are easily reproduced on subsequent tracings provided that there are no changes in the patient; not so the precordial leads. While the proper position of chest electrodes should be known to all technicians, errors are made in placement either through haste or failure to appreciate the importance of the electrode site. The

resulting variations are usually minor and not a cause for confusion, but occasionally a relatively minor shift in the position of the electrode may cause enough change in the electrocardiogram to be a source of major confusion. This is especially true in the patient with suspected myocardial infarction in whom shift of electrodes to the right across the precordium has produced an apparent diminution in R waves.

It is the widespread custom to take 12 leads: extremity leads I, II, III, aVR, aVL, aVF, and chest leads V1 through V6. It should be emphasized, however, that every complete electrocardiogram must include leads taken over both the right and the left ventricle; in certain abnormalities the standard chest leads may not do this. On occasion leads V3R and V4R may be required to demonstrate right ventricular complexes or leads V7 or 8 to demonstrate left ventricular complexes. In the evaluation of Q waves, leads III and aVF taken in inspiration or I and aVL taken in expiration may be required. In severe emphysema, the position of the heart may be so significantly lowered by the depressed diaphragm that most of the "precordial" leads will actually be taken cephalad to the heart, whereas in pregnancy or marked obesity the standard positions may be low in respect to the heart. Complex arrhythmias may require an esophageal lead in order to be certain of the timing of atrial complexes. A bipolar lead placing the right arm electrode in the third interspace at the right sternal margin and the left arm electrode in the 4th interspace at the left edge of the sternum and using the lead I connection will sometimes substitute for the esophageal lead. Further, continuous tracings of considerable length may be necessary for adequate evaluation of arrhythmias. The small pieces of electrocardiogram served up to the physicians by the laboratory may well be enough to intrigue or confuse the physicians but are rarely satisfactory for interpretation.

Over-interpretation is a common clinical sin which may result in cardiac neurosis. The range of the normal electrocardiogram is wide indeed. Further, abnormalities of the electrocardiographic pattern do not necessarily indicate clinical disease. Thus, an incomplete or even a complete right

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bundle branch block may be present for many years without any other cardiac abnormality being detected. Early repolarization may result in a significant ST segment elevation; the segment is concave upward, however, whereas a pathologic ST elevation is usually the reverse. Apparent ST depression may result from a prominent atrial recovery wave. This can be identified by the fact that the PR segments as well as the ST segments are lowered. T waves may be flattened or even inverted as a result of vagotonia, eating or even smoking. These changes are transient, however, and should disappear in a basal state. Caution is indicated in ascribing such T wave changes to disease, but the possibility that they represent a positive response to a type of stress test must not be overlooked.

The opposite error, failure to appreciate minor but significant abnormalities, is made less often but may be equally serious. Just as it is possible to overread minor T wave changes, the clinician must be careful not to falsely attribute these to "physiological" variation. When T wave changes persist over several days they are usually meaningful even though minor in nature. In any event an attempt must always be made to determine significance of these changes rather than immediately accepting them as benign or as indicative of disease.

The third type of error associated with the electrocardiograph stems from unjustified reliance on the ability of the test to pick up disease. Only too frequently a "normal" electrocardiogram is accepted as

assurance that there is nothing wrong with the heart. Not uncommonly, however, the electrocardiographic signs of infarction will completely disappear with time. Other infarctions, especially those on the posterior surface, may be difficult to diagnose from the electrocardiogram in the first place. It must always be remembered that electrocardiographic changes do not appear at the moment of infarction but may develop slowly. Initial changes may not appear for as long as four to seven days after infarction if they appear at all. A patient may have marked coronary narrowing with severe angina pectoris, and yet both the resting tracing and that taken after exercise and stress tests may be normal. Many a surgeon has found that a normal preoperative electrocardiogram has not kept a patient from having an infarction during an operation. Likewise, it is not rare for the internist to tell a patient that he can find no evidence of disease only to be called in the middle of the night to treat a heart attack. Significant degrees of hypertension or valvular disease may exist for some time before pushing the electrocardiographic pattern beyond the normal range.

All who use the electrocardiograph must bear in mind that it is only a laboratory technic, not an infallible oracle. If the errors involved in the test itself as well as the limitations of the test are constantly remembered, it is an invaluable tool in the service of medicine. If these factors are ignored the clinician may well be led down the garden path.

# Oral Lichen Planus

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Lichen planus is an inflammatory papillary reaction of the skin and oral mucosa which is thought in some instances to be associated with debilitating disorders such as mental stress, shock, anxiety, avitaminosis-B<sup>1</sup>. A specific causative agent cannot be ascribed. Examination of the epidermis reveals acanthosis with moderate hyperkeratosis and hyperplasia of the stratum granulosum. (Fig. 1.) In the superficial layers of

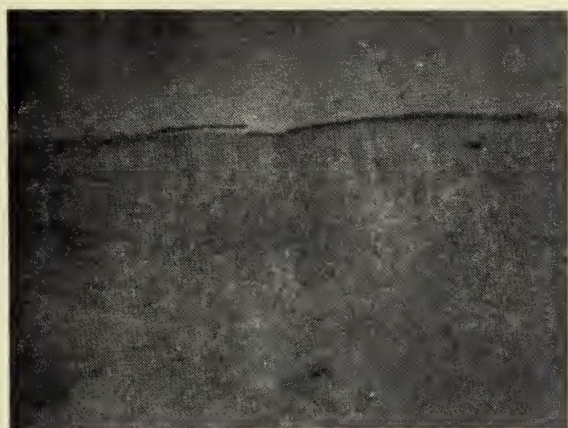


FIG. 1. Note "saw-tooth" rete pegs, loss of basal layer of cells and inflammatory cell infiltrate.

the corium there is cellular infiltration particularly by mononuclear cells and lymphocytes. There is, in some instances, a characteristic "saw-tooth" appearance of the rete pegs. The basal layer of epithelium may show ballooning degeneration and an intimate association with the underlying inflammatory infiltrate with eventual loss of the basal cell layer.<sup>1</sup>

Lichen planus has a predilection for certain areas of the body, particularly the flexor surfaces of the wrists, legs, and arms. It may affect the mucous surfaces particularly in the oral regions including the lips, cheeks, and tongue. Mucosal lesions may or may not be accompanied by cutaneous lesions. The disease occurs most commonly after the second decade and is rarely seen in children. Lichen planus occurs chiefly in the female sex and practically unknown in the negro race.

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## Clinical Features

The initial skin lesions are discrete papules with hyperkeratinization which may appear in the form of adherent scales. The primary lesions are red but later change to a reddish-purple or even to a dark brown with white lines or points. These papules often coalesce and produce larger lesions of various shapes.

The lesions in the oral cavity are usually characterized by bluish-white lines in a net-like pattern on the oral mucosa. (Fig. 2.)



FIG. 2. Note lacy white pattern of lichen planus of the buccal mucosa.



FIG. 3. Lichen planus of the tongue.

The tongue (Fig. 3), the floor of the mouth, and the lips are less frequently affected.<sup>2</sup> On occasion, the mucosal lesions may be confused with leukoplakia since they can occur as dense white plaques.<sup>3</sup>



| ORAL LICHEN PLANUS |     |     |       |                         |                |          |          |                            |
|--------------------|-----|-----|-------|-------------------------|----------------|----------|----------|----------------------------|
| Patient            | Age | Sex | Race  | Location of Oral Lesion | Other Lesions  | Symptoms | Duration | Possible Etiologic Factors |
| 1                  | 38  | M   | White | Buccal mucosa           | None           | None     | 3 months | Possible emotional         |
| 2                  | 41  | M   | White | Buccal mucosa           | None           | None     | Unknown  | Possible emotional         |
| 3                  | 37  | M   | White | Buccal mucosa           | None           | None     | Unknown  | Possible emotional         |
| 4                  | 61  | M   | White | Buccal mucosa           | None           | None     | Unknown  | Unknown                    |
| 5                  | 39  | F   | White | Buccal mucosa           | None           | None     | Unknown  | Menstruation               |
| 6                  | 33  | F   | White | Buccal mucosa           | Wrists         | None     | 7 weeks  | Menstruation               |
| 7                  | 34  | F   | White | Buccal mucosa           | Ankles         | None     | 3 weeks  | Menstruation               |
| 8                  | 44  | M   | White | Buccal mucosa           | None           | None     | Unknown  | Unknown                    |
| 9                  | 47  | F   | White | Retromolar area         | Wrists         | None     | Unknown  | Emotional problem          |
| 10                 | 31  | F   | White | Tongue                  | None           | Burning  | Unknown  | Emotional problem          |
| 11                 | 48  | F   | White | Tongue                  | Ankles, arms   | Burning  | Unknown  | Emotional problem          |
| 12                 | 28  | F   | White | Tongue                  | Elbows, ankles | Burning  | Unknown  | Emotional problem          |
| 13                 | 36  | M   | White | Buccal mucosa           | None           | None     | Unknown  | Emotional problem          |
| 14                 | 51  | F   | White | Buccal mucosa           | Vagina         | Burning  | 6 months | Unknown                    |
| 15                 | 58  | F   | White | Buccal mucosa           | Anal region    | None     | 3 months | Unknown                    |
| 16                 | 47  | F   | White | Buccal mucosa           | None           | None     | Unknown  | Unknown                    |
| 17                 | 49  | M   | White | Tongue & gingivae       | Legs, penis    | Burning  | Unknown  | Unknown                    |
| 18                 | 64  | F   | White | Gingivae                | Vagina         | None     | 2 months | Unknown                    |
| 19                 | 51  | M   | White | Buccal mucosa           | Elbows, wrists | None     | 7 months | Emotional problem          |

### Treatment

The treatment is quite variable and appears to be empirical. Arsenic and mercurial compounds have been shown to be beneficial at times. Eliminating proven irritating substances and allergens and assuring the general well-being of the patient has been successful in some instances.

### References

1. Shafter, W. G., Hine, M. K., Levy, B. M.: *Oral Pathology*, W. B. Saunders Company, Philadelphia, 1958.
2. Fox, H.: Lichen Planus Confined to the Mouth, *Arch. Dermat. & Syph.* 24:1071, 1931.
3. Medical Records, University of Tennessee, Memphis, Tennessee.

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### EFFECTS OF RADIATIONS ON THE HEART.

Jones, Arthur and Wedgwood, John, *Brit. J. Radiol.* 1960.

The purpose of this study was to determine the effects of radiation on the heart. In a review of the literature, these authors had found that all pathologic evidence indicated an extremely low inherent radiosensitivity of the heart. The few structural changes in the myocardium occurred only after radiation doses above the range of clinical usage. By contrast, recent reports in the literature describe electrocardiographic changes with moderate dosages of radiation. This disparity of reports served as a stimulus for this investigation.

The authors' previous clinical experience indicated two types of recognized disturbances requiring cardiologic investigation during the course of radio-therapy of intrathoracic tumors. The first of these consist of cardiac dysrhythmias which are most often due to pre-existing intrinsic cardiac disorders. Otherwise, they are related to mediastinal metastases. The second group consist of "mediastinal-pericardial reactions." Although such mediastinal-pericardial reactions have been infrequent in the authors' experience, nevertheless, they have constituted the most important clinical disturbance in which cardiac irradiation might play a major role. They are most frequently encountered after a radiosensitive tumor has invaded the pericardium. Infrequently, pericardial changes may follow a radiation induced pleuropneumonitis, but such cases are usually complicated by infection. In summary, these syndromes are conditioned by neoplastic or inflammatory processes and provide no evidence of the radiation tolerance of the normal pericardium.

The authors' clinical and electrocardiographic investigation was limited by choice to cases of breast carcinoma in which a direct parasternal port was irradiated by orthovoltage roentgen rays. Roentgen therapy of breast carcinoma produces a more suitable study than irradiation of other common intrathoracic tumors. Bronchogenic carcinoma may of itself produce cardiac irregularities by mediastinal deposits and may invade the pericardium and even metastasize to the myocardium. The mediastinitis so frequently associated with esophageal carcinoma makes such cancers unsuitable for this study. Also neither of these cancers, unlike breast carcinoma, are associated with the longevity necessary for following development of possible cardiac abnormalities. A full cardiologic examination was made in each case before x-ray treatment was begun and was repeated insofar as possible, at six intervals during and after x-ray therapy for a followup period of two years. Reasons are given for regarding EKG changes observed in leads V-1 and V-2 as being positional and of no pathologic significance; the former had previously been described by other authors as evidence of cardiac irradiation effects. In this series 16% of the patients developed pathologic changes on the EKG. These changes were usually transient, apparently trivial, were symptomless and occurred mainly in patients having previous evidence of ischemic heart disease. A possible pathogenesis of these changes is discussed. It is emphasized that these EKG changes should not be used to limit essential radiotherapy. (Abstracted for the Middle Tennessee Heart Association by Clifton Greer, M.D., Nashville.)



The evaluation of the tranquilizers in the control of nausea is difficult. So many subjective factors play a part in such an evaluation.

## Pre- And Postoperative Use Of Prochlorperazine

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There are a number of good antiemetic drugs that are also good tranquilizers, but not all of them are equally useful in surgery. Their secondary effects, though they may ordinarily be of little or no concern, may expose the surgical patient to unnecessary hazards. Conversely, of course, effects that might be undesirable in ambulatory patients (e.g., sedation) may be desirable in surgical patients. With these thoughts in mind, we recently studied prochlorperazine to determine its efficacy and safety in pre- and postoperative use as an antiemetic-tranquilizer, its compatibility with other commonly used drugs, and its effect on blood pressure, pulse and respiration.

During the study period, prochlorperazine was added to the routine preoperative medication, usually administered one hour before operation, of 40 male and 56 female patients, who ranged in age from 16 to 83 years. Except for aged or debilitated patients, who received doses of 5 mg., all received intramuscular doses of 10 mg. of prochlorperazine and the usual dose of the narcotics used (usually meperidine, 100 mg. and morphine sulphate, 1/6 gr.) was reduced by 50 percent. The pulse, respiration, and blood pressure of each patient were recorded on admission to the hospital, one-half hour after the preoperative dose of prochlorperazine, as well as during and after operation. The types of operation performed, other medications used preoperatively, and the anesthetic agents usually employed are listed in table 1.

Patients who had postoperative nausea and vomiting received additional intramuscular injections of 5 or 10 mg. of prochlorperazine at three to four hour intervals as needed to maintain control of symptoms.

### Results

On entering surgery 60 patients were calm and relaxed; their apprehension, fear, and anxiety were minimal. Because the narcotic dose was reduced by 50%, patients were more alert than usual during the preoperative period, and in all but 16 patients, induction of anesthesia was smooth and uncomplicated. Intubation was conducted in 80 patients without difficulty; retching or gagging occurred rarely. Although prochlorperazine increased the sedative effect of the central nervous system depressants used, we have since found that reducing the preoperative dose of narcotics by 25% rather than 50% provides more satisfactory sedation. The addition of prochlorperazine to the preoperative regimen caused no apparent change in the effects of any of the other drugs used.

The pre- and postoperative blood pressure, pulse, and respiration of the patients in this series did not vary significantly from those recorded at admission. During operation transient changes in diastolic blood pressure that may have been caused by the drug were seen in 10 patients. In 2, increases of more than 10 mm. of mercury occurred. In the other 8, who were all over 50 years old, there were decreases of more than 10 mm. of mercury. No significant changes were observed in pulse rates or respiration. Drowsiness occurred in 10 of 27 patients who were treated for postoperative nausea and vomiting; in one case this reaction was considered excessive. No other side effects were observed.

The incidence of nausea and vomiting following the various surgical procedures is shown in table 1. In 11 patients who had nausea only and in 15 who had both nausea and vomiting, prochlorperazine afforded good or excellent control in 25 (93%). With

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Table 1

## SURGICAL EFFECT ON NAUSEA AND VOMITING

| <i>Surgical Procedure</i> | <i>Number Performed</i> | <i>Usual Pre-anesthetic Agent (other than prochlorperazine)</i> | <i>Usual Anesthetic Agent</i>  | <i>Number of Patients Nausea Vomiting</i> |    |
|---------------------------|-------------------------|---|--|---|----|
| Orthopedic                | 12                      | Atropine sulfate 1/150 gr.*                                     | Sodium pentothal induction.  | 6   | 2  |
| Neurosurgical             | 3                       | Meperidine 50 mg.<br>Atropine 1/150 gr.                         | Cyclopropane in most cases.<br>(If patient was hypertensive, ether was usually used.)  | 2   | 2  |
| Thoracic                  | 9                       | Atropine 1/150 gr.<br>Morphine sulfate 1/8 gr.                  |  | 2   | 0  |
| Lower abdominal           | 11                      | Atropine 1/150 gr.<br>Meperidine 50 mg.                         |  | 3   | 2  |
| Upper abdominal           | 6                       | "   |  | 0   | 0  |
| Perineal                  | 5                       | "   |  | 1   | 1  |
| Gynecology                | 12                      | "   |  | 4   | 3  |
| Urology                   | 15                      | "   | (Urology)<br>Sodium pentothal i.v. and nitrous oxide on short procedures, sodium pentothal i.v. and cyclopropane on longer procedures. | 5   | 3  |
| Thyroid                   | 5                       | "   |  | 2   | 2  |
| Vascular                  | 3                       | "   |  | 0   | 0  |
| Extremities               | 5                       | "   |  | 1   | 0  |
| Miscellaneous             | 9                       | "   |  | 1   | 0  |
| Anesthesia only           | 1                       | "   |  | 0   | 0  |
| TOTALS                    | 96                      |   |  | 27  | 15 |

\*Toward the last of the study the dose of Meperidine was increased to 75 mg.

12 exceptions, control was achieved with the first dose. The 2 patients who did not respond were found to have complications which necessitated correction. One had an intestinal obstruction and the other a duodenal obstruction.

## Comments

Prochlorperazine appears to be well suited for routine use both as a premedicant and for control of postoperative nausea and vomiting. With 93% good or excellent results, prochlorperazine also seems to afford more effective control of postoperative nausea and vomiting than the non-phenothiazine antiemetic trimethobenzamid which, in a series of patients previously studied, had provided good or excellent results in 60% of the patients. It was our impression, however, that in those who were elderly or severely debilitated trimethobenzamid is sometimes more suitable, for, although it affords less control of emesis, it tends to have less effect on the blood pressure.

## Summary

Prochlorperazine was evaluated to determine its efficacy and side effects when used as an adjunct to preoperative medication and for control of postoperative nausea and vomiting. (For the purpose of the study the usual dose of central nervous system depressants was reduced by 50%.) Used as a premedicant in 96 patients, the tranquilizing effects of prochlorperazine reduced the need for narcotics, afforded smooth induction of anesthesia, facilitated intubation, and controlled emergence excitement and restlessness. Of 27 patients who experienced postoperative nausea and vomiting, prochlorperazine achieved complete control of symptoms in 25. The only side effects observed that could be directly attributed to the drug were drowsiness, which occurred in one patient, and hypotension in eight, all of whom were 50 years or older. In our experience, prochlorperazine appears to be a safe and effective compound both for pre- and postoperative use.



## CLINICOPATHOLOGIC CONFERENCE

### Craniopharyngioma in the Third Ventricle\*

E. L. Cashion, M.D., and J. M. Young, M.D.

#### Case Presentation

*Present Illness.* This 47 year old white male minister was admitted to this hospital for the first time as a transfer from a local hospital where he had been a patient for 2 months. The history obtained from his private physician indicated that the patient had had "Asiatic flu" several months prior to admission with muscular aching and right sided headaches, listlessness, easy fatigability and increasing drowsiness, and temperature elevations occasionally as high as 102°. Two months prior to this admission the patient had become suddenly nauseated and had severe headache and vomiting. He was admitted to the local hospital soon after onset.

A lumbar puncture done showed a pressure in excess of 400 mm. No abnormal neurologic findings were present. A bilateral carotid arteriogram was done and a plaque was found in the internal carotid artery on the left. X-ray study of the skull was considered normal. On the 4th hospital day, parietal burr holes were made and increased spinal fluid pressure was found to be present. The ventriculogram revealed slightly dilated symmetrical ventricles with no evidence of a space-occupying lesion. Throughout his stay at the local hospital, there were occasional spikes in temperature to 101°. He was treated with streptomycin with some improvement. Prednisone (Meticorten) was also used, and it was thought that this also produced some improvement. Cultures of the spinal fluid for acid-fast bacilli and fungi were negative. His PPD skin tests, 1st and 2nd strengths, were negative. On approximately the 31st day, marked papilledema was detected and a subtemporal decompression on the right side was done. A biopsy of the brain and arachnoid was reported normal. His spinal fluid pressures varied from 160 mm. to 360 mm. with cell counts of 6 to 300 WBC. with a differential of 50 to 90% lymphocytes. Spinal fluid sugar ranged from 26 to 78 and spinal fluid protein from 160 to 220 mg. per 100 ml. The patient was transferred to this hospital for further study and treatment.

*Physical Examination.* The patient was a 47 year old white man who appeared chronically ill; he was confused but oriented as to time and place. The temperature was 100, pulse 90, B.P. 130/90. The pupils were regular and equal, reactive to light and on accommodation. The fundi showed papilledema. There was a firm, nonpulsing subtemporal decompression on the right. The re-

mainder of the physical examination was within normal limits and there were no abnormal neurological findings.

*Laboratory Data.* Hemogram on admission was within normal limits. Sedimentation rate was 48 corr. BUN. and urinalysis were normal. STS was negative. Spinal fluid pressures ranged from 240 to 600 mm., with proteins of 90 to 250 mg.%, cell counts of 0 to 1250 WBC. and a differential count of 97% neutrophils. Serologic tests for fungi including histoplasmosis, blastomycosis and coccidioidomycosis were negative. Serologic studies of the spinal fluid for viral encephalitis were negative. Blood serologic tests for viral encephalitis showed a 1:2 dilution reaction for Eastern equine encephalitis, but were negative for St. Louis encephalitis, Western equine encephalitis and lymphocytic choriomeningitis. Gram stain of the urine showed many gram negative bacilli, and culture was positive for *E. coli*. Spinal fluid cultures were positive on three occasions and included staphylococcus albus and Gaffky tetragen. Twenty-four hour determinations of calcium excretion were within normal limits. Serum electrolytes were also normal.

*X-ray Studies.* The chest film was negative. Skull x-rays showed bilateral surgical defects noted in the posterior parietal region and also a surgical defect in the right temporal region. There was no evidence of erosion or other signs of increased intracranial pressure. The pineal gland was in the midline. The sella was normal. The film of the abdomen was negative. X-ray examination of the spine and hip joint showed osteoporosis of the lumbar spine and minimal degenerative joint disease changes. The EKG. was normal.

*Hospital Course.* The patient was given anti-tuberculous therapy consisting of streptomycin and INH. His PPD, which was reported negative at the other hospital, was positive in the second strength on re-testing at this hospital. He had intermittent fever following admission with temperatures as high as 103, but this was only for a period of three weeks after which he remained afebrile. In addition to the anti-tuberculosis therapy, the patient was continued on steroid therapy which was started at the other hospital. He received prednisone 2.5 mg. b.i.d.

For the first 3 months lethargy increased, vision diminished and his general condition was one of deterioration. Prednisone was increased to 20 mg. daily and this was followed by a progressive diminution in spinal fluid pressure and improvement in the mental status of the patient so he became rational, alert, and oriented. For a period of approximately 3 weeks he was able to do without any spinal taps. Steroids were further increased to 10 mg. every six hours and the patient became very labile emotionally with cushingoid features.

His fluid intake increased to 6000 cc. daily with a urine specific gravity of 1.010. Because of infection in the genitourinary tract the steroids were temporarily discontinued. His decompression area

\*From the Surgical and Laboratory Services of the Veterans Administration Medical Teaching Group Hospital, Memphis, Tenn.

became quite tense; frequent spinal taps had to be resorted to.

During his 7th month of hospitalization, after attempts at pneumoencephalogram failed, the patient was subjected to air ventriculogram and this showed marked internal hydrocephalus and good ventricular filling. The third ventricle appeared dilated but did not show well on the lateral views. The aqueduct could not be definitely identified. On his 352nd hospital day, his temperature rose to 105° rectally and he began to perspire profusely and went into profound shock. He developed Cheyne-Stokes respirations and convulsive seizures and expired. During his hospitalization, the patient had sporadic convulsive seizures along with distention of his decompression site and required Sodium Dilatin every six hours to control these.

### Clinical Discussion

DR. CASHION: As a rule, in a neurological-neurosurgical case we attempt to make a localizing diagnosis. This is for several reasons, but the most obvious being if one can localize the lesion one is well on the way to describing the pathology, a typical example being, of course, a pituitary tumor with changes in the sella. Or, if you can be even less specific and say it is a parasellar lesion, the choice is narrowed down to three or four lesions, such as, pituitary tumor, craniopharyngioma and glioma of the hypothalamus. In this case we do not have any localizing findings. He did have convulsions which makes one think of a cortical lesion but this, of course, can be present in a diffuse lesion. We are left with a case of generalized increased intracranial pressure from some unknown cause.

The usual causes of generalized increased intracranial pressure are brain tumor, brain abscess, and subdural hematoma with brain tumor being by far the most likely, particularly in a 47 year old white man with convulsions. With the use of arteriography, spinal fluid analysis, ventriculography, EEG's and repeated neurological examinations, over a period of say a year, most of the time you should be able to localize the lesion fairly well. If this man came in with one convulsion and a negative neurological examination right then you might not be able to run the lesion down, but given this length of time—he was here a year—neurological changes should develop or something should appear in the x-rays. For instance, the ventriculogram was done seven months

after the onset of his illness. The arteriogram was done right at first. Over this period of time, if it were the usual brain tumor, brain abscess, or subdural hematoma, one should have been able to localize the lesion in most such cases.

There are obscure causes for increased intracranial pressure and these can be divided into two groups, first, the very unusual causes, and second, a big group are inflammatory diseases. The obscure causes for generalized increased intracranial pressure include lead poisoning, CO<sub>2</sub> intoxication, carcinomatosis of the meninges, serous meningitis, and hypoparathyroidism. In fact, almost any disease you wish to name, at one time or another, has been described with papilledema or generalized increased intracranial pressure. I do not think that the patient had any of these specific diseases. Apparently someone must have considered his calcium metabolism because they did a calcium excretion of the urine. Lead poisoning again usually gives one a fairly typical picture over a period of this length. One would have a lead line, or lead in the urine, or stippling in the red blood cells. Carcinomatosis of the meninges can be quite difficult, early, to diagnose with no localizing findings. One can have a ventriculogram just as in this case, but usually the arachnoid is biopsied, or, the cytotechnician looking at the spinal fluid picks up large epithelial cells, so I do not think the patient had this. Also, in a year's time it seems as though a primary site would become apparent. This did not happen in this case. Serous meningitis (meningeal hydrops, otic hydrocephalus, pseudotumor cerebri) can cause papilledema, but usually this is a self limited disease, and in a year the increased intracranial pressure would produce blindness. We are led to believe from this protocol that he did not lose his vision. As far as I know, there has never been an autopsy case of serous meningitis. Also, the ventricles are usually small rather than large as are these.

We pass then from the obscure causes of generalized increased intracranial pressure to some type of inflammatory disease causing increased intracranial pressure. Early in inflammatory disease, of almost any nature (this is particularly true in viral infec-



tions), one can find generalized increased pressure. Later, in bacterial meningitis, there occurs thickening of the arachnoid and sealing of the outlet of the fourth ventricle with basilar arachnoiditis, and then comes increased intracranial pressure. There is no x-ray evidence of increased pressure, yet our case had a tight decompression. This is mentioned two or three times in the protocol. Also, papilledema is described on his admission here, so I don't think there is any question but what the man did have increased intracranial pressure. However, it is difficult for me to understand anyone doing a pneumoencephalogram in the presence of increased intracranial pressure. With generalized increased intracranial pressure one can sometimes do this and get by with it, but if there is increased intracranial pressure and a localized lesion it is definitely contra-indicated even to attempt a pneumoencephalogram. If you think the patient has a basilar arachnoiditis or an arachnoiditis secondary to infection you would not expect to see anything on a pneumoencephalogram. You would not expect ventricular filling, and that is exactly what happened here. They then did a ventriculogram which shows symmetrical dilatation of the ventricles and would be in keeping with some type of inflammatory disease of the arachnoid.

Then we come to what would most likely have caused it. Viral infections do not, as a rule, cause this sort of reaction. The most common type of bacterial meningitis is meningococcal meningitis, and certainly there is nothing in this record to make us believe that the patient had this. Staphylococcal meningitis can be quite chronic and can be associated with neurosurgical complications. These complications, however, are usually those of serous effusion (subdural effusion). Certainly there is nothing on the x-ray to indicate this. Various fungi can cause it, but he was checked for these and nothing was found. I am therefore left with the second most common cause of bacterial meningitis and that is tuberculosis, which is probably the most common cause of basilar arachnoiditis. This would explain his prolonged hospitalization. It would explain his relatively low spinal fluid white cell count. With bacterial meningitis one

would expect certainly early in the disease, a higher elevation of white count. The various fungi could cause this picture but one would think that they would have grown bacteriologically on some occasion. How often do you see tuberculous meningitis with an arachnoiditis and without tuberculosis in the chest? This I attempted to find out, but I cannot tell you. It does occur. My final diagnosis or impression would be they were dealing with a case of generalized increased intracranial pressure most likely due to arachnoiditis, secondary probably to tuberculosis.

#### Final Clinical Diagnoses

1. Increased intracranial pressure secondary to arachnoiditis due to tuberculosis.

#### Anatomic Findings

DR. YOUNG: At the time the autopsy was performed, the body was that of a 47 year old white male who externally showed little of note. The scalp was covered with greying hair. There was a subtemporal decompression defect on the right and this was bulging. When the body cavities were opened there was a minimal pleural effusion in the left chest. The lungs were not increased in weight though they did show a few small areas of lobular pneumonia scattered through both bases. The lungs weighed 270 grams for the left, and 350 grams for the right. Cultures from these areas of pneumonia revealed *Staph. aureus*. The heart weighed 400 grams and otherwise showed nothing significant. The liver was the only other organ except for the brain to demonstrate gross changes. It weighed 2140 grams and revealed moderate fatty metamorphosis.

At the time the skull cap was removed, the brain was very tense. The convolutions were flattened. The sulci were almost obliterated. There were areas of encephalomalacia in the region of the subtemporal decompression on the right, and there was evidence of needle tract perforations of both occipital lobes. The brain weighed 1400 grams. The base of the brain, in the region of the optic chiasm, showed a bulge anteriorly, and the vessels around this area had been pushed laterally (Fig. 1). This was a very firm area, but until the brain was sectioned we were not actually aware of what



FIG. 1.

was present within the third ventricle. I think it is important to realize that there were no growths on the outside of the brain in this area other than the few filmy meningeal adhesions along the base of the brain.



FIG. 2.

When the brain was sectioned, the third ventricle was greatly dilated, and it contained a tremendous tumor-like mass filling it (Fig. 2). It was well demarcated. It could be separated easily from the surrounding ventricular wall. It appeared granular but the firmness was not that of a cystic mass filled with a granular material, but more of a solid tumor. The tumor mass showed small projections which extended into the foramina of Munro and probably caused this man's intermittent hydrocephalus. This probably accounted for his recurrent increased intracranial pressure, his visual failure, his headaches, etc. Microscopically, it is made up mainly of a squamous type of epithelium (Fig. 3). This, even

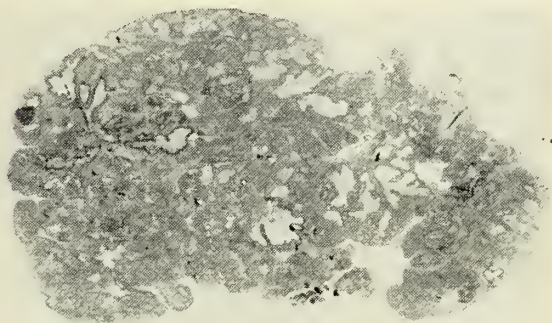


FIG. 3.

though it is in a somewhat unusual location, is a craniopharyngioma. It is a solid tumor mass. As you know, most of these are usually suprasellar with a few of them being intrasellar or of dumbbell shape, involving the sella and the region immediately above. However, in the literature a few of these have been reported to occur entirely within the third ventricle. As to the origin of these tumors, there is considerable discussion in the literature. The craniopharyngiomas, of course, are supposed to be developmental defects coming along with the development of the anterior pituitary as it ascends along Rathke's pouch. Kernohan has stated that squamous metaplasia occurs in little nests of anterior pituitary cells and that one finds a greater number of these little nests of squamous metaplasia in older people than in younger people. This would indicate possibly that some of these tumors develop later in life and do not come from developmental rests but out of metaplasia. The craniopharyngiomas, as a group, may be



cystic or they may be solid or partly cystic and solid. In the literature one finds a number of papers which have been reported recently dealing with dermoids, epidermoids, and craniopharyngiomas occurring in the older age groups. As you know, many of these have been reported in children and certainly most have occurred below the age

of 15. However, the dermoids and epidermoids as a group tend to grow a little slower and these lesions may appear in the older age groups more commonly. The *final anatomic diagnoses* in this case are:

1. Craniopharyngioma, located in the third ventricle.
2. Lobular pneumonia, bilateral.

The American Medical Association's 16-year program of disseminating information on new medical motion pictures reached a coveted milestone this winter with the publication in the J.A.M.A. of the 1,000th film review.

Medical film reviews, which have been especially valuable to medical educators and program chairmen in planning for state medical society meetings and hospital staff conferences, have been appearing regularly in the Journal since February, 1946. They are widely read both in this country and abroad.

The AMA maintains a film library of 1,253 prints of 268 different subjects. The library is constantly being enlarged as new films are produced. In 1961 the film library booked a total of 10,025 showings of medical motion pictures, an increase of almost 14 per cent over the previous year.

For the past six years the British Medical Association has reprinted the AMA's motion picture reviews in its publication, "Medical and Biological Illustration." Each review contains technical data on the film, details about its availability, name of producer or author, and a description and evaluation of content. Each film is screened by a committee of physicians who are specialists in the subject being presented.

# President's Page



WILLIAM O. VAUGHAN,  
M.D.

This will be my last President's Page.

Next year you will have the privilege of hearing from Dr. William J. Sheridan of Chattanooga, who has earned the right to your unqualified support. I wish him the very best.

Every member of the Tennessee State Medical Association should have the opportunity to serve as President. I know this is impossible, of course, but the experience gained in this post would make any doctor a better member and physician. In the course of a year, the contacts which the Presidency affords create friendships of lasting character with individuals from those of the highest rung in our national organization to the almost forgotten loyal doctor, residing in our smallest county society.

This year has been for me a most significant highlight of my medical career. It has not been easy, neither has it been boring. At present, and for the foreseeable future, we of the medical profession are, and will be, challenged from all sides to justify our position in the composite picture of our American way of life. To be sure, we must admit that in most of our recent encounters with "the opposition" in the press, and on radio and television, we have not always presented our image in its well deserved and true perspective.

My parting plea with members of the Tennessee State Medical Association would be for you to become more thoroughly informed on the problems facing your State Association and Medicine on the national level, particularly to familiarize yourselves with the political and socio-economic problems of our Twentieth Century economy. We must educate the citizenry, through our patients, of a clear-cut view of the many issues that have arisen pertaining to medical care and the type of care in our State and Nation.

My final plea as I step aside is this: May we always give our very best to the people we serve as physicians; may we also give our very best to those who are so immediately a part of our lives, our fellow doctors of medicine.

Let us stand together behind the ideals which we have accepted as our individual responsibility. This is our strength, and through this strength will come the satisfaction of a job well done, for each of us and for all of us of the Tennessee State Medical Association.

If we are to have a part in the shaping of destiny of American Medicine, we must each, individually, become a member of Medicine's socio-economic task force. We should grasp every opportunity to present the true picture of Medicine to every group and walk of life or individuals in our respective communities.

This has been a stimulating and educational year and since this signals my last President's Page, my sincere thanks and deep appreciation goes to each member of TSMA.

A handwritten signature in dark ink, reading "W. O. Vaughan". The signature is fluid and cursive, with a large, stylized "V" at the end.

President



## The New President



WILLIAM JOSEPH SHERIDAN, JR., M.D.  
CHATTANOOGA

## WILLIAM J. SHERIDAN, JR., M.D.

*74th President, Tennessee State Medical Association*

**A** MAN with a quick but gentle wit and a ready anecdote for any occasion—a skillful practitioner with a deep and abiding faith in and dedication to his profession—a physician whose activities and participation in the affairs of his county medical society, his state association, and his specialty societies have earned for him the deserved reputation as medical statesman—these characteristics combine to form a profile of the new president of the Tennessee State Medical Association, William Joseph Sheridan, Jr.

Dr. Sheridan was born in Chicago, Illinois, January 23, 1900, the son of Mary Bacon Sheridan and William Joseph Sheridan, Sr. He received his public school education in Chattanooga, where he attended grammar school and in Dayton, where he was graduated from Rhea County High School in 1918.

Dr. Sheridan took his pre-medical work at the University of the South, and at the University of Michigan. In 1924, he was awarded his degree of Doctor of Medicine by the University of Michigan. While at Michigan, he became a member of Phi Beta Pi medical fraternity.

His internship and residency were served at Baroness Erlanger Hospital, Chattanooga, from 1924 to 1927, at which time he went into private practice as a general surgeon. His specialty society memberships include the American College of Surgeons and the Chattanooga Academy of Surgery.

Dr. Sheridan was elected to membership in the Chattanooga-Hamilton County Medical Society, Inc., in 1927. He served as secretary of that society for three years, beginning in 1933. In 1940 he served as vice president of the society and the following year he assumed the presidency.

A further tribute to his professional skill is evidenced by his having served as Chief of Staff at Erlanger Hospital and as Chief of Surgery at Erlanger and Memorial Hospitals. At present he is a member of the active surgical staff at Erlanger and Memorial Hospitals and on the consulting staff of T. C. Thompson Children's Hospital and Tri-County Hospital. Dr. Sheridan also served five years on the first Board of Trustees of the Tennessee Tuberculosis Hospitals. His keen interest in the affairs of the medical profession has been manifested in his continuing activity, especially in the area of medicine's legislative problems.

Dr. Sheridan is serving his second term on the Board of Trustees of the Tennessee State Medical Association and was chosen President-Elect at the TSMA annual meeting at Chattanooga in 1961. He is an alternate delegate from TSMA to AMA and a former councilor for his district.

His youthful appearance belies the fact that he is a veteran not only of World War II but of World War I, when he served as a private. His military career in World War II took him to the Mediterranean Theater where he served as a lieutenant colonel, Medical Corps, from 1942 to 1945, as a member of the Second Auxiliary Surgical Group.

Dr. Sheridan was united in marriage in 1926 at Cleveland, Tennessee, with Miss Grace Clarice Kibble, who is known to her many friends as "Skibby."

A guest in the Sheridan's home is immediately impressed by the aura of warm hospitality. And a guest may, with a bit of gentle persuasion, get Dr. Sheridan to engage in one of his most recent hobbies—playing the electric organ.

Dr. Sheridan enjoys golf, gardening, fishing, and he is justly proud of his inboard cruiser which is docked on Chickamauga Lake.

Physicians of Tennessee can be confident that the leadership of their state medical association has been placed in competent hands, and can expect a rewarding year of progress with Dr. Sheridan as President.



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APRIL, 1962

## EDITORIAL

### SENILE OR HYPOTHYROID

Although many of the physical changes associated with the aging process are rather distinctive, in some patients who have hypothyroidism, the similarity between these two conditions may be rather striking. It, therefore, would be calamitous if an elderly person who had been directed to a life of vegetation were not restored to a serviceable career following the recognition and appropriate treatment of the hypothyroid state.

In a geriatric hospital in Oldham, England, during a two and one-half year period, 93 patients were suspected of having hypothyroidism.<sup>1</sup> A definite diagnosis of hypothyroidism was established in 58 of this group. The diagnostic tests included a metabolism test, a determination of the serum cholesterol, the performance of a twenty-four hour radio-iodine uptake test, and a determination of protein-bound-iodine.

When these tests were diagnostic, treatment with L. thyroxine was started. Observations relative to weight changes, physical appearance as reflected by serial photographs, fall in the serum cholesterol, changes in the electrocardiogram and level of protein-bound-iodine were recorded. These laboratory data were evaluated in relation to the changes in the patient's physical, emotional and mental capacity. Finally, in the 13 patients who died, a postmortem study was conducted. Four of these 13 died in hypothermic coma. In this total group were 9 men and 49 women. This ratio was in keeping with the 5:1 ratio of women to men in the 3,417 new patients seen in the hospital during the period of investigation. The average age was  $70.3 \pm 6.8$  years.

The complaints primarily were cardiovascular in type, and many of the patients were anemic. The duration of the symptoms suggest an existence of the hypothyroid state 3 to 5 years before the diagnosis was established. It is suggested that many patients dying with strokes may have an unrecognized background of hypothyroidism. A routine screening of all elderly patients with a protein-bound-iodine test might be quite fruitful.

Treatment of these patients was recognized by the authors as requiring care and caution in view of the existence of cardiovascular disease in so many of these individuals. Over-enthusiastic use of thyroid extract in patients with arteriosclerotic heart disease may precipitate angina, coronary thrombosis or materially worsen the degree of congestive failure.

This report of Lloyd and Goldberg<sup>1</sup> is read with interest. The problem is a practical one. With the increase in the size of the older age group of the population and with the increasing attention to medical care and hospital facilities for this group, the opportunities for the investigation of this problem are increasing.

A fortunate individual would be the one who is lifted from the abyss of senility into the light of a normal life by the taking of thyroid extract. Personal experience has confirmed that the result is a magic wand-like effect, wonderful for both patient and physician.

A. W.

### Reference

1. Lloyd, W. H. and Goldberg, I. J. L.: Incidence of Hypothyroidism in the Elderly, *Brit. M. J.* 2: 1256, 1961.



### TSMA PLAYS HOST TO TENNESSEE'S CONGRESSMEN

On March 15, The Tennessee State Medical Association sponsored a visit to Washington to meet and talk with the State's representatives and senators. The delegation from the medical profession included certain of the Association's officers and staff, committee chairmen, and physicians from the nine Congressional Districts. Accompanying the medical group were several officers and representatives of the Tennessee Hospital Association as well as the chairman of the Legislative Committee of the Tennessee State Dental Association. Each of the physicians representing his Congressional District were chosen as ones who were personally acquainted with the respective Congressman, permitting a friendly and personal climate at such a gathering. Some thirty persons made up the visiting party to Washington.

The visit permitted, during the forenoon, a call upon the two Senators from Tennessee, as well as calls upon the several Congressmen. The delegation from Tennessee were hosts at a luncheon for the Tennessee members of the House and Senate. This offered the opportunity for free discussion of the medical problem with which Congress is faced.

After the lunch there was further opportunity for some of the Tennessee delegation to meet individually with their representative for the particular home district for further discussion of legislative and medical matters. Others visited the House of Representatives.

There are real advantages to a visit by members of our profession with those who represent us in Congress. We will not say or even suspect that these few visitors from the medical and dental professions and from the hospitals group will influence much the thinking of our representatives as balanced against a much greater electorate in the nonprofessional portion of the population. However, such a visit permits dis-

cussion and explanation on a personal basis between acquaintances, friendly people, contrary to the image of doctors portrayed almost daily in the press. It offers those in government the opportunity to explain their problems to the representatives of a small but important segment of the electorate at this particular time. It was quite obvious to those in the party that the legislators of Tennessee were impressed by the fact that a group of professional men should take time from a busy practice to go to Washington to meet with them.

All in all, the mission was thought to be a successful one and one which should be repeated upon occasion in years to come. It is well to remind our Washington representatives that doctors are also citizens who have thoughts upon the best interests for the Nation, particularly when these interests have a medical tone. Who is in a better position to advise upon things medical than the medical profession!

## DEATHS

**Dr. Eleanor Williamson**, 43, Columbia, died February 17th at her home.

**Dr. James L. Ames**, 82, Mt. Juliet, died February 11th at a nursing home.

**Dr. Charles C. King**, 68, Memphis, died March 4th at his home. Dr. King established the Memphis Cancer Society.

**Dr. Charles R. Henry**, 75, Chattanooga, died March 14th at his home.

## PROGRAMS AND NEWS OF MEDICAL SOCIETIES

### Roane County Medical Society

The regular monthly meeting of the Roane County Medical Society was held on March 27th, in the cafeteria of the Oak Ridge Hospital. The meeting was preceded by a dinner. The scientific program consisted of a presentation entitled "Respiratory Infection in Children—A New Look at an Old Problem" by Dr. Sarah Sell, Nashville. "Heart Failure in Children" was the subject of Dr. Gordon Sell, Nashville.

### Knoxville Academy of Medicine

On March 3rd, the Knoxville Academy of Medicine were hosts at a dinner meeting at



C'est Bon Country Club where more than 750 persons heard Dr. Walter H. Judd, Minnesota, Representative in the United States Congress. Dr. Judd spoke on "America in a Changing World." The Academy opened the meeting to the public and the demand for tickets was exceptionally large.

On March 13th, the Society held its regular meeting in the auditorium of the Knoxville Academy of Medicine. The speaker was Dr. J. Marsh Frere, radiologist, at St. Mary's Hospital. Dr. Frere discussed the method of Cinefluorography.

### Chattanooga-Hamilton County Medical Society

The Society's regular monthly meeting was conducted in the Interstate Building. The scientific program consisted of a paper by Dr. John C. Hampton entitled "Esophago-Pharyngeal Junction." Dr. Robert G. Demos spoke on the subject "The Menopause." A third paper by Dr. Willis E. Lemon was entitled "Harmartoma of the Lung."

### Memphis-Shelby County Medical Society

The regular monthly meeting of the Society was conducted on January 2nd in the Institute of Pathology. Dr. Richard Walker, Dr. Jerry Francisco and Attorney-General Phil Canale were the guest speakers on the subject "The Drinking Driver."

## NATIONAL NEWS

### The Month in Washington (From the Washington Office, AMA)

The American Medical Association said that President Kennedy misstated the real issue when he renewed his request to Congress for legislation that would provide limited health care for the aged under social security.

"We believe the American people are entitled to know that the real issue is not medical care versus no medical care for the elderly," Dr. Leonard W. Larson, president of the AMA said.

"The real issue is: should wage-earners and employers be forced to pay a substantial increase in taxes to provide medical care for millions financially able to take care of themselves?"

"No one supporting this proposal has yet presented any evidence that such radical legislation is needed.

"The medical profession is for the Kerr-Mills law to help the aged who need help. We are for voluntary enterprise, including health insurance and prepayment plans for the non-needy aged."

Dr. Larson also disputed other statements on the issue which President Kennedy made in a new health message to Congress. Dr. Larson said that contrary to what Mr. Kennedy said, the Administration legislation (the King-Anderson bill) could interfere with the patient's freedom of choice of hospital and physician.

It would give the federal government "such broad power to control the practice of medicine in the nation's hospitals that the Secretary of Health, Education and Welfare would literally become the czar of American medicine," Dr. Larson said.

Dr. Larson also pointed out that it would not be a health insurance program as President Kennedy said. Instead, it was "political medicine," Dr. Larson said.

"As the Supreme Court of the United States has ruled, Social Security is strictly a tax program with current taxes used principally to provide benefits for those now retired," Dr. Larson said.

President Kennedy's new health message was a summation of various Administration proposals in the field with some additions. It included:

- Federal aid for construction of medical schools and scholarships for medical students.

- Expanded health research, including a new institute for child health and human development.

- More funds for the National Institute of Mental Research.

- Federal loans to help set up group practice clinics.

- Encouragement of states to provide medical services for migrant workers.

- Federal research and grants to help combat air pollution in cities.

- A three-year program of federal assistance to get American children vaccinated against polio, diphtheria, whooping cough and tetanus. The government would pay the cost of vaccines for all children under

five, provided state and local communities set up inoculation programs.

—Establishment of a National Environmental Health Center “to provide a focal point for nationwide activities in the control of air pollution, water pollution, radiation hazards, and occupational hazards.”

\* \* \*

A broad investigation of cold remedies to determine whether their advertising overstates their effectiveness has been started by the Federal Trade Commission.

As a start, the Commission sent questionnaires to 24 major manufacturers of cold remedies. Answers to the questionnaires are mandatory under the Federal Trade Commission Act. When and how many additional manufacturers will receive similar questionnaires has not yet been determined.

The answers to the questionnaires will enable the Commission to make a comprehensive review of problems throughout the entire field and will assist in evaluating scientific evidence claimed for the medicinal preparations.

The survey seeks information on all such preparations offered for the relief or treatment of congestion, irritation, inflammation, infection, allergy or other conditions, involving any part of (1) head, including the accessory nasal sinuses, (2) throat, (3) bronchi, (4) chest, or other portions of the respiratory system. The questionnaires also seek information on claims for the relief or treatment of any symptom or manifestation of these ailments.

The Commission's resolution stated that it had reason to believe that certain corporations in offering such products to the public “may have falsely advertised and misrepresented” their efficacy. The resolution added that the public interest required that an investigation be conducted to determine whether such advertising was in violation of the Federal Trade Commission Act.

The names of the 24 manufacturers to whom the questionnaires were sent will not be disclosed, an FTC spokesman said.

## MEDICAL NEWS IN TENNESSEE

### Hale-McMillan Lecture Meharry Medical College

The Meharry Medical College held its annual Hale-McMillan Lecture on April 12, in the Lecture Hall of the College. An outstanding physician, Dr. Henry N. Harkins, Professor and Executive Officer of Surgery at the University of Washington School of Medicine, was the speaker. Dr. Harkins' subject was “An Experimental-Clinical Synthesis of an Operation for Duodenal Ulcer: Twenty-Five Years of Personal Experience.”

Dr. Harkins is one of the foremost authorities in experimental and clinical surgery in the field of peptic ulcer, burns, hernia, etc.

### Oak Ridge Seminar

Twenty-four doctors from twelve states were in Oak Ridge recently to attend the seminar of the Oak Ridge Institute of Nuclear Studies Medical Division. The second session will be conducted in Oak Ridge in May and the third at the Mayo Clinic, Rochester, Minnesota, in June 1962.

### New Hospital Board

Governor Buford Ellington has appointed the State Hospital Licensing Board to which he has named Dr. Samuel H. Hay of Murfreesboro as one of the Board members. The Board consists of physicians, hospital administrators and lay members.

In addition, Governor Ellington appointed Dr. William J. Darby, Nashville, to the State Board of Basic Science Examiners.

### Bristol Diabetes Melitus Program

Approximately 300 doctors and lay people interested in diabetes melitus attended the March 8th symposium sponsored by the Bristol Memorial Hospital Medical Staff. Dr. W. C. Grigsby, Jr. was chairman of the staff's symposium committee. Speakers included: Dr. Pricilla White, assistant professor of pediatrics at the Joslin Clinic of Boston; Dr. Frederick W. G. Wolff, assistant professor of medicine at Johns Hopkins Medical School, Baltimore, who spoke on “Recent Trends in Treatment of Diabetes—Especially the Oral Drug”; Dr. Bertram F.



Sproffkin, clinical professor of neurology at Vanderbilt University School of Medicine in Nashville, speaking on "Diabetic Neurology"; and Dr. Alfred N. Costner, associate, McKee-Wilson Eye Hospital, Johnson City, speaking on "Eye Changes in Diabetes."

The symposium was concluded with a social hour and buffet dinner.

### Meharry Medical College

A grant of \$10,000 has been awarded the department of oncology at Meharry Medical College by the Damon Runyon Fund for Cancer Research to assist the department's cancer research program. It was stated that the grant will aid Meharry's research team in investigating the mechanisms involved in the invasion of the human body by cancer cells. Meharry has received \$29,700 of the \$72,919 given Tennessee institutions by the Damon Runyon Fund.

### University of Tennessee College of Medicine

A recent study at the College of Medicine revealed that the physician-patient ratio in Tennessee is increasing. According to Dr. M. K. Callison, dean, the ratio is now 106 physicians per 100,000 population, compared with 95 per 100,000 ten years ago.

The Tennessee ratio compares with the national average of 130 doctors per 100,000 people. Only one other state in the south, Florida, materially exceeds Tennessee in its ratio.

The study further revealed that of graduates from 1950 through 1959, approximately 62 percent of the students admitted from Tennessee remain in the State to practice. The other 38 percent go to Mississippi, Arkansas, Florida and Texas to practice.



Dr. William H. Lee, Jr., assistant professor of surgery has been appointed a Markle Scholar in medical science by the John and Mary R. Markle Foundation of New York. The appointment provides a \$30,000 grant to supplement Dr. Lee's salary and aid his research for five years.

### Nashville Memorial Hospital

On March 8, an informational dinner was held at the Hermitage Hotel. Governor Buford Ellington is Honorary Chairman of the

Nashville Memorial Hospital Program. The dinner represented the institution of a drive for the proposed hospital in East Nashville. Funds have already been accumulating.

### Central State Hospital

On February 26th, a group of public health nurses together with the Director of Public Health, Dr. R. D. Hollowell, of the Rutherford County Public Health Department visited the Hospital to see the operation of this institution. This is a part of the program planned for the cooperation of the Out-Patient Clinic of Central State Hospital and the public health nurses of Rutherford County.

The group received some general information about admission, some kinds of mental disorders, and especially some information about the new drugs employed in the treatment for mental patients, including the side-effects of these drugs. After luncheon, the group toured the Hospital.

Participants of the Hospital staff were Dr. Larry White, Assistant Superintendent; Dr. Frank Luton, Clinical Director; Dr. Henry Cohen, Director of the Out-Patient Clinic and Miss Dorothy Kent, Director of Nursing Education.

## PERSONAL NEWS

**Dr. Frank C. London** and **Dr. James L. Southworth**, Knoxville, were recent speakers at the Cocke County Heart Association meeting in Newport.

**Dr. Walter C. Shea**, Lenoir City, has been named the outstanding Young Man of the Year by the Lenoir City Jaycees.

**Dr. B. L. Holladay**, Linden, has been re-elected chairman of Sub-Region One of the Nashville Regional Blood Program.

**Dr. Lawrence C. Lewis, Jr.** has assumed the presidency of the Memphis Obstetrical and Gynecological Society. He succeeds **Dr. William T. Black, Jr.** Named president-elect was **Dr. Joseph C. Mobley** who will take office in 1963.

**Dr. Jesse E. Adams**, Chattanooga, recently addressed the Cleveland Kiwanis Club.

**Dr. Harwell Wilson**, Memphis, has been installed as President of the Southeastern Surgical Congress.

**Dr. A. W. Loy**, Grandview, has been re-elected chairman of the Board of Directors at the Rhea County Hospital.

**Dr. Jack W. Lindsay**, Rockwood, announces the opening of his office for the practice of medicine.

**Dr. W. M. Phillips**, Jackson, has resigned his position as county medical examiner to become associated with a group of doctors at Trenton.

**Dr. John B. Thomison**, Nashville, spoke at the annual pre-medical forum of Alpha Epsilon Delta, University of Tennessee premedical fraternity.

**Dr. B. F. Allred**, Jamestown, has been named Fentress County Medical Examiner.

**Dr. William A. Garrett**, Cleveland, discussed the King-Anderson Bill at the meeting of the Cleveland Association of Life Underwriters.

**Dr. Martin Bronson**, Elizabethton, has been named to the Board of Directors of the Rotary Club.

**Dr. Fount Russell**, Clarksville, was a recent guest speaker at the Rotary Club, discussing the importance of persons developing hobbies.

**Dr. Richard C. Crain**, Knoxville, was a guest speaker at the South Knoxville Rotary Club where he discussed the role of the clinical laboratory and pathologist in the diagnosis and treatment of disease.

**Dr. Elizabeth W. Kirby-Smith**, Sewanee, became Coffee County's director of public health on April 1st.

**Dr. Harry A. Stone**, Chattanooga, has been appointed Chairman of the Chamber of Commerce Health and Sanitation Committee.

**Dr. Elizabeth Hay Rhea** is now associated with the Goodall Clinic at Smyrna.

**Dr. John W. Adams**, Chattanooga, was a guest speaker before the meeting of the local Dental Auxiliary.

**Drs. W. G. Rhea and Joe Mobley**, Paris, attended the Southeastern Surgical Congress at Louisville.

**Dr. Paul Spray**, Oak Ridge, has gone to Nigeria for five weeks' service as a specialist-consultant for orthopedics overseas, a division of Medico.

**Dr. L. B. Molloy**, Lawrenceburg, was a recent speaker on the subject "Heart Disease" over a Lawrenceburg Radio Station.

**Dr. Horace T. Lavelly, Jr.**, Nashville, announces the removal of his office for the practice of surgery and gynecology to 104 Twentieth Avenue North.

**Dr. Swan B. Burrus and Dr. George R. Burrus**, Nashville, announce the opening of their offices for the practice of Obstetrics and Gynecology.

foundation; Clara Barton organized the Red Cross in 1881; Laurence Flick laid the foundation for the National Association for the Prevention and Cure of Tuberculosis in 1893, and in 1907 Miss Emily Bissell gave the society financial stability when she organized the sale of Christmas seals. The American Cancer Society got under way in 1913, under the direction of a doctor's daughter in New York, Mrs. Robert C. Meade. Mrs. Albert Lasker was of great assistance to the American Cancer Society and also to the American Heart Association. This latter society was stabilized by Ralph Edwards with his Truth or Consequence radio shows which raised \$1,570,000.00. Discussion is given to several other similar organizations such as the Cerebral Palsy Society, the National Society for Crippled Children, the National Society for Mental Health, the Muscular Dystrophy Society, the Common Cold Foundation, the National Kidney Foundation and The National Cystic Fibrosis Foundation.

The history of the Community Fund is reviewed. The first such drive was the one conducted in 1879 by ten New York City Hospitals. This appeal realized \$25,000.00. There are now 1217 United Funds, and 887 Community Chests. In 1959 these funds raised \$450,000,000.00. This is an immense sum, but is insignificant compared to the money spent by the Federal Government each year for relief, public health, and medical research.

The question of consolidation of these independent drives with community efforts is presented but not resolved.

## ANNOUNCEMENTS

### Postgraduate Day in Psychiatry The Tennessee State Department of Mental Health, Central State Hospital, and Vanderbilt University School of Medicine

On Thursday, May 24, 1962, a one-day course will be given to explore the "Interrelationships of the Mental Hospital and the Psychiatric Problems of Medical Practice." Emphasis will be given to the enhancement of the family doctor's understanding of psychiatric problems in his patients, to increase his skills in meeting these problems in office practice and to enable him to more adequately use the help provided by the mental hospitals operated by the State Department of Mental Health. Dr. Leo H. Bartemeier, nationally known and Chairman of the A.M.A. Council on Mental Health, will participate in the discussions.

The course is acceptable for Category I credit by the American Academy of General Practice.

Registration will be held in the lobby of the Hawk Building at Central State Hospital. Directions may be obtained from the Information Desk which is close by. Tuition and luncheon by courtesy of the Central State Hospital.

## BOOK REVIEW

**THE GENTLE LEGIONS.** By Richard Carter. Doubleday & Company Inc. 1961—335 pages.

The history of the National Volunteer Health Fund Raising Organizations is told by Richard Carter in an interesting and very instructive manner. The difficulties associated with their origin and the impact of a single personality on the successful operation of these societies are most interesting. The acceptance of these organizations as part of our society is made quite clear. Basil O'Connor has been the spark of life for the polio



## PLACEMENT SERVICE

*The Placement Service of the Tennessee State Medical Association is designed to assist doctors and communities to get together. Further information and contacts to both physicians and communities are available from the Public Service Office, 112 Louise Avenue, Nashville 5, Tennessee.*

### Locations Wanted

A 36 year old married physician would like to establish clinical, assistant or associate practice in radiology in east Tennessee community of 40,000. General diagnostic and therapy and isotopes training. Protestant. Graduate University of Tennessee School of Medicine. Available upon notice.

LW-407

A 30 year old married physician would like to associate in the practice of ob-gyn with other physicians in any size community, no preference as to location. Protestant. Graduate University of Tennessee. Tennessee license. Available fall 1962.

LW-422

A 28 year old married general practitioner would like to become associated in clinical practice in any size community of middle Tennessee with other physician. Protestant. Graduate University of Tennessee. Presently serving as Flight Surgeon USAF. Tennessee license. Available June 1962.

LW-424

A 34 year old general practitioner, Board eligible in anesthesiology, with two years residency, would like clinical or associate practice in east Tennessee community of 20,000-100,000. Protestant. Graduate Medical College of Georgia. Available upon notice.

LW-428

A 29 year old married physician would like to become associated in the practice of urology in clinic in Tennessee community of 40,000 plus. No preference as to locality. Four years residency. Presbyterian. Graduate University of Texas Medical Branch. Available July 1962.

LW-429

A 30 year old practicing general surgeon, graduate of the Medical College of Georgia, with five years residency, would like to relocate in Tennessee community of 20,000 or over, with no preference of area, in associate or group practice. Protestant; married; available July, 1962.

LW-440

A 48 year old general surgeon, graduate of the University of Virginia, would like group or hospital, or associate practice in Tennessee community 10,000-50,000, with no preference as to location. Three years residency. Married, Protestant, available immediately.

LW-441

A 30 year old pediatrician, graduate Medical College of South Carolina, would like associate practice in Tennessee community of 18-20,000 plus, preferable middle section. Protestant, married, residency training. Available July 1962.

LW-442

A 37 year old internist, graduate of the Medical school of Zurich, Switzerland, would like clinical, industrial, associate or group practice in any metropolitan area of Tennessee. Married, Protestant, residency. Available within 3-6 months.

LW-443

A 42 year old pediatrician would like to relocate in Tennessee in either group or solo practice. Graduate of University of Tennessee. Married, Protestant, residency. Prefers middle Tennessee community of 10,000 plus. Available June 1962.

LW-444

### Physicians Wanted

A physician in east Tennessee community of 6,000 needs associate for general practice. Age 25-35, one year internship. New, private office; examining rooms and equipment available. Hospital in community.

PW-134

Middle Tennessee community of slightly over 800 in need of general practitioner. No other physician in area. Office space and hospital privileges. Near good recreational area.

PW-139

Small Tennessee community of 1,200 (trade area of 15,000) in lower middle Tennessee needs general practitioner. Two other physicians in area. Excellent opportunity for young physician wishing to establish good solo practice. Office space and housing readily available.

PW-151

Southeastern community of 10,000 in need of general practitioner. Office space available with six months free rent. Eighteen miles from larger city. Good location.

PW-154

Physician in middle Tennessee town of 7,000 needs general practitioner to handle practice for one-two years while he enters residency training. Alternating residency training and possible partnership later could be considered. Rental basis for office and equipment. Excellent opportunity.

PW-157

Physician in middle Tennessee community of over 15,000 in need of physician for practice of ob-gyn, on either good salary plus percentage graduating into full partnership, or associate basis.

PW-161

One year free rent offered to one or two physicians wishing to locate in a thriving east Tennessee community, trade area of 35,000. Seventy-five bed hospital; near TVA dam and recreational area.

PW-165

Physician in east Tennessee city of 2,000 would like to share office and equipment with associate general practitioner. Good housing facilities available. Hospital 15 miles.

PW-169

One or two physicians needed in east Tennessee community of 15,000 population, to replace the now practicing physicians who are establishing a hospital elsewhere. Housing, office space and equipment available. Good schools, recreational facilities. Hospital 17 miles.

PW-178

# Journal of the Tennessee State Medical Association

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## A Definition of Insanity\*

EDWARD DUMBAULD, United States District Judge for the Western District of Pennsylvania, Pittsburgh, Pa.

*At sometime in his practice of medicine, almost every family doctor will be involved in the determination of the presence or absence of mental disease in one or more of his patients. This will be particularly true in the areas of competence of a patient to manage his business or affairs or of the need of his admission to a mental hospital. These phases of mental illness are increasing with an aging population. The family doctor will find much of interest in this paper.*

Mental illness is the area in which informed collaboration between the medical profession and the legal profession is most necessary. This is particularly true because in certain respects legal doctrines have been adopted by courts which are at variance with the professional views of medical experts in the fields of psychiatry.

There are three particular areas in which the problems of mental illness concern both professions. I am leaving out of account in this connection the matter of psychiatric and psychologic examination for the Juvenile Court in connection with the treatment of juvenile delinquents.

### The Question of Incompetence

The first of these areas is in connection with the determination of a person's incompetence to handle business affairs. Here the law, in connection with banks and trust companies, offers a device which may be

characterized as "preventive medicine." By means of a well-drafted trust instrument it is possible for a person having considerable property to provide for its investment and management by a financial institution. In this manner, some of the strains and burdens of management and investment decisions can be transferred to other shoulders, and greater opportunity is afforded for leisure or for a professional man's undivided concentration upon the affairs of his own profession. Moreover, a trust instrument can make provision for the event of illness, insanity, or other disability of the beneficiary of the trust; and such provision established in advance will become operative automatically, without any publicity or court proceedings.

Where advantage has not been taken of this method, however, modern legislation provides for the administration of an incompetent person's affairs merely upon a showing that he or she is not capable of handling business transactions. No finding of insanity or mental incapacity is required, which in popular opinion might be regarded as embarrassing or accompanied by undesirable stigma.

As typical of such legislation I take the Pennsylvania Incompetents' Estates Act of 1955, with which I am most familiar. Undoubtedly the same principles prevail in the legislation of other states.

This act defines "incompetent" as "a person, who, because of mental infirmities of old age, mental illness, mental deficiency, drug addiction or inebriety, is unable to manage his property, or is liable to dissipate it or become the victim of designing persons."

\*Presented at the meeting of the Tennessee State Medical Association, April 10, 1962, Memphis, Tenn.



The court, upon petition and after hearing at which good cause is shown, may find a person to be incompetent and appoint a guardian or guardians of his person or estate. Legal title to the incompetent's property remains in him, subject to the power granted to the guardian by statute and orders of the court.

The petitioner may be the alleged incompetent's spouse, a relative, a creditor, a debtor or any person interested in the alleged incompetent's welfare. Notice must be given in such manner as the court directs to the alleged incompetent, to all persons who would be entitled to share in his estate if he died intestate at that time, and to such other parties as the court may direct. The alleged incompetent shall be present at the hearing unless he is absent from the state or the court is satisfied, upon the presentation of positive testimony, that because of his physical or mental condition his welfare would not be promoted by his presence. At any hearing relating to the mental condition of the person whose competency is in question, the deposition of, or sworn statement by, a superintendent, manager, physician or psychiatrist of any state-owned mental hospital or Veterans Administration Hospital, or a physician or a psychiatrist at any municipally-owned hospital or institution shall be admissible in evidence as to the condition of an inmate of such hospital in lieu of his appearance and testimony, unless by special order, the court directs his appearance and testimony in person.

The duty of the guardian of the estate of an incompetent is, generally speaking, to administer his property, collect the income from it, and make all reasonable expenditures necessary to preserve it. The guardian is a fiduciary, who must give bond and render an account under the supervision of the court.

It is believed that these provisions of the law can be administered effectively without any embarrassment or humiliation to the patient involved. The controlling circumstance concerning which the physician would be required to testify is simply that by reason of mental infirmities of old age or mental illness or other conditions outlined in the statute, the patient is "unable to manage his property, or is liable to dissi-

pate it or become the victim of designing persons." This provides a standard which enables the physician to give meaningful testimony without doing any violence to modern conceptions prevailing in the medical profession.

#### Commitment to a Mental Hospital

The second area of concern to both professions is the matter of admission of patients to mental hospitals. The position of the medical profession is that treatment in a mental hospital should be available, just as in the case of other hospitals, upon the professional decision of the physician that such treatment is desirable. In cases where involuntary confinement is necessary, however, the law regards this as a deprivation of liberty and requires a measure of supervision by a court.

Again turning to the law of Pennsylvania as a reasonably progressive piece of legislation, we find that the Mental Health Act of 1951 provides four methods of commitment. The first is voluntary admission, at the applicant's own request, at the discretion of the superintendent of the institution. If he finds the applicant is mentally competent to make such application and that he is in need of care and will be benefited by admission, he may admit the applicant as a patient. However, a person voluntarily admitted cannot be detained for more than 10 days after he has given written notice to the superintendent of his intention or desire to leave the institution.

The second method of admission is upon application made by the patient's relative, friend, legal guardian, the person having custody of him or liability for his support, or by any other responsible person. The application may be made on behalf of any person who appears to be mentally ill or in such condition as to need the care required by persons who are mentally ill. Application may also be made on behalf of mental defectives and epileptics. In the case of mental defectives and epileptics, the application must be accompanied by the certificate of one qualified physician. In the case of a person thought to be mentally ill, there must be a certificate by two qualified physicians.

Among other things the certificate must

state that in the physician's opinion the patient is or is thought to be mentally ill, mentally defective, an inebriate or epileptic, or is in need of and will be benefited by care and the admission applied for. It must also contain information relative to the patient given him by others and the facts as to the physical and mental condition and the behavior of the patient which he has observed and upon which he bases his opinion. In the case of mental deficiency, the results and conclusions from recognized psychologic tests must also be included.

The law also provides for temporary emergency detention upon the certificate of at least one qualified physician, stating that immediate temporary care in a mental hospital is necessary for the patient. Such detention is limited to temporary care for a period of not more than 21 days.

The provisions of the law which have just been reviewed seem to be reasonably adequate to provide for admission without court proceedings, upon the certificate of two physicians.

The third method of commitment is by court order. Here a petition may be made by any responsible person on behalf of a person who is mentally ill or who by reason of epilepsy is dangerous to himself or others. If the patient is a person who is thought to be mentally ill and in need of observation, diagnosis and treatment, the petition may be made by his guardian, committee, relative or friend. In the case of an epileptic not dangerous to himself or others the application may be by his parent, guardian or other responsible person. The same is true of a mental defective. In the case of an inebriate, two citizens, who shall be his spouse, parent, child, committee of his estate, or next friend must make the application. Every such petition shall be accompanied by the certificate of two qualified physicians, except in the case of a mental defective or an epileptic when only one is required.

When a petition for commitment is made, the court may appoint a commission, composed of two qualified physicians and an attorney. The commission shall hear such evidence as may be offered or as they may require relating to the mental condition of the person sought to be committed, as well

as his or his counsel's statement; and shall make a written report to the court setting forth whether or not the commission finds that the patient is in fact mentally ill and a proper subject for commitment to a hospital, and the facts on which their conclusion is based.

After a hearing, at which the court may require the presence of the person sought to be committed and may exclude the public, the court makes the order of commitment if it approves the report of the commission that the person in question is mentally ill and is a proper subject for admission to a mental hospital, or is satisfied that the person sought to be committed is a proper subject for care, or that the safety and welfare of the public requires such commitment.

The fourth method of commitment relates to persons convicted or charged with crime. If the defendant, upon appearing in court, appears to be mentally ill or in need of care in a mental hospital, the court shall designate a responsible person to apply for his commitment in accordance with the procedure previously described. In the case of any person detained in a penal or correctional institution, application to the court may be made by the prisoner's counsel or the superintendent, warden, jail physician or other executive officer of the institution in which he is detained, or by any responsible person, whether or not connected with such institution. After due notice, the court may order an examination of the person sought to be committed by two qualified physicians or by a commission composed of two qualified physicians and an attorney. If the court is satisfied that the person sought to be committed is mentally ill or mentally defective, notice shall be given to counsel or to the nearest available relative or friend, who shall be given an opportunity to be heard. If no hearing is requested, the court may nevertheless hold a hearing upon its own motion. If the court is satisfied that the person sought to be committed is mentally ill or mentally defective, it shall order the commitment or transfer of such person to a mental hospital or an institution for mental defectives. If the person is undergoing sentence or is found to have a criminal tendency, the commitment shall be to a state hospital for patients convicted of



crime, charged with crime, or with criminal tendencies.

In a case in which I was of counsel, *Commonwealth v. Moon*, 383 Pa. 18, 26, decided on October 4, 1955, it was held that this procedure covers persons detained in any penal institution, and impliedly includes persons convicted of first degree murder.

While proceedings in that case were still pending, the legislature, at the instigation of the prosecution, amended the provisions which have just been described so as to establish a different rule for the commitment of any person whose penalty for crime has been fixed at death by a court or jury, or who has been sentenced to death. With respect to such persons the amendment provides that the petition for commitment may be made to the court if "it shall appear that such person is insane and such insanity shall have occurred since the penalty was fixed or sentence imposed. The term 'insanity,' as used [here] shall mean that such person does not have capacity to understand the nature and object of the proceedings against him, to comprehend his own condition in reference to such proceedings, to understand the nature of the punishment to be inflicted upon him, and to confer with his counsel with reference thereto."

#### Insanity as Defense in Criminal Acts

We have now reached the third area of interest to both professions, namely, the matter of insanity as a defense in criminal cases. This is the area in which the problem is most acute by reason of divergence between the medical and legal professions.

"Insanity" is not a clinical entity. It is purely a legal term. As long ago as 1928 the eminent Judge Cardozo, Chief Judge of the New York Court of Appeals, the highest court in the State of New York, and later an eminent Justice of the Supreme Court of the United States, said "Everyone concedes that the present definition of insanity has little relation to the truths of mental life."

When the defense of insanity is set up in a criminal prosecution, the law of Pennsylvania, as of most other jurisdictions, is the so-called "knowledge of right and wrong" test laid down in the so-called M'Naghten Rules, 383 Pa. at 23. These were the rules laid down by the judges of England in a

famous case. They were laid down in 1843 and engendered by the excitement and fear which grew out of the acquittal of Daniel M'Naghten who had attempted to assassinate Sir Robert Peel, Prime Minister of England, but who instead shot Peel's private secretary, Drummond, by reason of mistaken identity. Upon M'Naghten's acquittal public indignation, led by the Queen, ran so high that the judges of England were called before the House of Lords to explain their conduct. A series of questions was propounded to them, and their answers really constitute an advisory opinion delivered by Lord Chief Justice Tindal. In substance the M'Naghten Rules stated that to establish a defense on the ground of insanity it must be clearly proved that at the time of committing the act the party accused was laboring under such a defect of reason, from the disease of the mind, as not to know the nature and quality of the act he was doing, or if he did know it that he did not know that he was doing what was wrong.

One of the chief critics of the M'Naghten Rules in recent years has been the Honorable John Biggs, Jr., Chief Judge of the United States Court of Appeals for the Third Circuit. In his book "The Guilty Mind," published in 1955, Judge Biggs cites as a striking illustration of the unsoundness of the M'Naghten Rules Hadfield's case, decided in England in 1800. Hadfield was an old soldier who had served the King in battle and sustained head wounds. Subsequently, he viewed himself as the saviour of mankind and felt that he had to sacrifice his life as had Jesus Christ and accordingly he had to be executed by the public authorities of the state and the easiest way of attaining this end was to attempt to assassinate King George III. He concluded that killing the king was the best way to attain quick martyrdom. He failed in the attempt to kill the monarch, but wounded an equerry but was acquitted as being under the influence of insanity at the time the act was committed and not under the guidance of reason. Obviously Hadfield in fact was insane, mentally ill or mentally diseased, and yet he would have had to be declared sane under the M'Naghten Rules had that test then been applicable in his case.

Our mental institutions contain many patients who are mentally ill and who know the difference between right and wrong. This test is therefore meaningless, and also is productive of difficulty when a psychiatrist undertakes to testify. As the Committee on Psychiatry and the Law of the Group for the Advancement of Psychiatry has stated, the law "does not allow the psychiatrist to communicate his unique understanding of psychic realities to the court and jury. More often, the mutual quest for the 'whole truth' cannot get past a barrier of communication which leaves the psychiatrist talking about 'mental illness' and the lawyer talking about 'right and wrong.'"

Nevertheless the Supreme Court of Pennsylvania in *Commonwealth v. Woodhouse*, 401 Pa. 242, 251-53 (1960), reaffirmed the M'Naghten Rules. Three of the seven justices of that court dissented.

In the *Moon case*, to which reference has previously been made, the proceeding there under review by the Supreme Court of Pennsylvania did not involve the test to be applied in connection with the defense of insanity at the trial. It was conceded by attorneys for the defendant, as they were bound to do under the law of Pennsylvania, that the jury was to apply the test of the M'Naghten Rules. But with regard to the proceeding for commitment of a detained prisoner under the Mental Health Act of 1951, upon the initiative of the warden of the jail in which he was confined, it was contended that a different standard, in closer conformity with the standards of modern medical science, was applicable. As previously stated, commitment under that procedure was required if the Court were "satisfied that the person sought to be committed is mentally ill." Mental illness was defined in the Act of 1951 as "an illness which so lessens the capacity of a person to use his customary self-control, judgment and discretion in the conduct of his affairs and social relations as to make it necessary or advisable for him to be under care. The term shall include 'insanity,' 'unsoundness of mind,' 'lunacy,' 'mental disease,' 'mental disorder,' and all other types of mental cases, but the term shall not include 'mental deficiency,' 'epilepsy,' 'inebriety,' or 'senil-

ity,' unless mental illness is superimposed."

The Supreme Court of Pennsylvania in the *Moon case* accepted the arguments of defendant that the Mental Health Act of June 12, 1951, P.L. 533, changed the similar language of the earlier Act of July 11, 1923, P.L. 998, by substituting the term "mental illness," as defined specifically in the Act of 1951, for the older term of "insanity" which appeared in the similar provisions of the Act of 1923. 383 Pa. at 26.

The facts of the *Moon case* were somewhat unusual in that the defendant was in court for failure to comply with an order made in a desertion and nonsupport proceeding directing him to pay a certain amount for the support of his estranged wife. When asked if he intended to comply with the support order, he replied, "absolutely not" and drew a pistol and fired a number of shots. The trial judge died almost instantaneously. After a trial at which he was convicted of first degree murder, and the jury fixed the penalty of death, thereafter the sheriff of Warren County, in his capacity of keeper of the jail, by reason of Moon's conduct in his cell, petitioned the court for the appointment of a sanity commission in accordance with the Mental Health Act of 1951. Such a commission was appointed and found that Moon was in fact mentally ill, suffering from chronic and continuing dementia praecox of the paranoid type, and was a proper subject for commitment to a mental hospital. The trial court, erroneously believing that the M'Naghten Rules were still in force in the pending proceeding and that no change had been made by the Mental Health Act of 1951, submitted additional questions to the commission regarding Moon's ability to know the difference between right and wrong. Relying upon the commission's answer to these improper questions, the court denied commitment as a mentally ill person. This decision was reversed by the Supreme Court of Pennsylvania.

While the *Moon case* was pending, another defendant in Cumberland County had shot at a judge in a nonsupport hearing, but had only injured him in the arm, although the wife's lawyer was killed. Notwithstanding this additional inflammatory incident, the Supreme Court of Pennsylvania re-



versed the trial court in the *Moon* case, a decision greatly to its credit and one applying the progressive standards of medical science as embodied in the Mental Health Act of 1951.

Unfortunately, as previously stated, new legislation, while the further proceedings in the *Moon* case were pending, amended the Mental Health Act of 1951 so as to reinstate the earlier standard of "insanity."

It may be of interest to note that after remand to the trial court, that court applying the standards of the Mental Health Act of 1951 found that it was not satisfied that the defendant's condition was such as to require his commitment. *Commonwealth v. Moon*, 386 Pa. 205, 213 (1956). Subsequently defendant's appeal, raising errors allegedly committed at the trial and seeking a new trial, was unsuccessful. *Commonwealth v. Moon*, 389 Pa. 304, 307-310 (1957). Thereafter the Pardon Board commuted his sentence to life imprisonment in an institution for the criminally insane.

New Hampshire, under the influence of Dr. Isaac Ray, never adopted the M'Naghten Rules.

Meanwhile an important landmark in the law was the repudiation of the M'Naghten Rules in the District of Columbia. This was done in the case of *Durham v. U.S.*, 214 F. 2d 862 (D.C. App. 1954), pointing out that as early as 1838 Dr. Isaac Ray in his now classic *Medical Jurisprudence of Insanity* called the right and wrong test a fallacious test of criminal responsibility. The court reviewed modern developments in psychiatry and adopted a test similar to that in force in New Hampshire. The Durham rule is "that an accused is not criminally responsible if his unlawful act was the product of mental disease or mental defect." 214 F. 2d at 874-875. The court indicated that the following would be in substance a proper instruction to the jury,

"If you the jury believe beyond a reasonable doubt that the accused was not suffering from a diseased or defective mental condition at the time he committed the criminal act charged, you may find him guilty. If you believe he was suffering from a diseased or defective mental condition when he committed the act, but believe beyond a reasonable doubt that the act was not the product of such mental abnormality, you may find him guilty. Unless you believe beyond a reasonable

doubt either that he was not suffering from a diseased or defective mental condition, or that the act was not the product of such abnormality, you must find the accused not guilty by reason of insanity. Thus your task would not be completed upon finding, if you did find, that the accused suffered from a mental disease or defect. He would still be responsible for his unlawful act if there was no causal connection between such mental abnormality and the act. These questions must be determined by you from the facts which you find to be fairly deducible from the testimony and evidence in this case."

More recently, on May 1, 1961, the M'Naghten Rules were repudiated by the United States Court of Appeals for the Third Circuit (embracing Pennsylvania, New Jersey and Delaware) in the case of *United States v. Currens*, 290 F. 2d 751 (C.A.3, 1961). The opinion was written by Chief Judge Biggs who in addition to his above mentioned book "The Guilty Mind" had also written a notable dissenting opinion on this subject in the earlier case of *U.S. ex rel. Smith v. Baldi*, 192 F. 2d 540, 549 (C.A.3, 1951).

Currens was a youth of 22 who transported a stolen automobile across a state line. At his trial Dr. Maurice H. Bowers, a qualified neuropsychiatrist of Pittsburgh, described Currens as a sociopathic personality possessing an emotional instability reaction but that he knew the difference between right and wrong but would not adhere to the right. Dr. Bowers testified that in his opinion the theft was the result of defendant's sociopathic personality and that a person with such a personality cannot be considered to be a mentally healthy person. Asked if the sociopathic condition was itself a mental disease, Dr. Bowers replied, "We consider it under the classification of mental illness, but we do not consider them [persons possessing sociopathic personalities] in the legal sense to be 'insane.'" The doctor also said that Currens was not "insane" in the sense that that legal, nonmedical, term is employed. He said "We do not use the word 'sane' or 'insane' in medicine." Dr. Bowers would not say that Currens was schizophrenic but indicated that he might be schizoid. The trial court charged in accordance with the M'Naghten Rules and denied a charge embodying the Durham Rule. The Court of Appeals reversed.

Refining upon the Durham Rule, the Court of Appeals adopted the following formula: "The jury must be satisfied that at the time of committing the prohibited act the defendant, as a result of mental disease or defect, lacked substantial capacity to conform his conduct to the requirements of the law which he is alleged to have violated." 290 F. 2d at 774.

The Court suggested the following language as an appropriate charge to the jury—

"If you the jury believe beyond a reasonable doubt that the defendant was not suffering from a disease of the mind at the time he committed the criminal act charged you may find him guilty. If you believe that he was suffering from a disease of the mind, but believe beyond a reasonable doubt that at the time he committed the criminal conduct with which he is charged he possessed substantial capacity to conform his conduct to the requirements of the law which he is alleged to have violated you may find him guilty. Unless you believe beyond a reasonable doubt that he was not suffering from a disease of the mind or that despite that disease he possessed substantial capacity to conform his conduct to the requirements of the law which he is alleged to have violated you must find him not guilty by reason of insanity. Thus, your task would not be completed upon finding, if you did find, that the accused suffered from a disease of the mind. He would still be responsible for his unlawful act if you found beyond a reasonable doubt that at the time he committed that act, the disease had not so weakened his capacity to conform his conduct to the requirements of the law which he is alleged to have violated that he lacked substantial capacity to conform his conduct to the requirements of that law. These questions must be determined by you from the facts which you find to be fairly deducible from the evidence in this case."

It is to be hoped that this landmark decision and the scholarly opinion of Judge Biggs will do much to hasten the demise of the M'Naghten Rules, either by judicial decision or legislation. Under the tests adopted by the District of Columbia Circuit and the Third Circuit, it will be possible for psychiatrists to testify meaningfully in accordance with the observations of their own

professional knowledge. They will no longer have to attempt to force the medical realities into the Procrustean frame of absurd legal definitions.

More fruitful collaboration between the medical and legal professions will thus become possible. "Insanity" is not a clinical entity. It is purely a legal term. As such I suggest that in substance it merely means that conditions exist which the law regards as sufficient to exculpate or relieve the defendant from criminal responsibility.

What circumstances suffice for this purpose is a matter of legislative policy. Progressive legislation undertakes to adopt the standards of the medical profession with regard to mental illness, rather than blindly persisting in adherence to outmoded medical concepts of an earlier era. It was a step forward when the Mental Health Act of 1951 in Pennsylvania replaced the term "insanity," which had been used in the earlier act of 1923, by the term "mental illness." Unfortunately there was a partial retrogression by the amendment of 1956. Moreover the Mental Health Act of 1951 applied only to the commitment proceedings where a person detained in a penal or correctional institution was thought to be mentally ill. It did not replace the ancient test of insanity or the M'Naghten Rules with respect to the substantive question of insanity as a defense in criminal prosecutions. As late as September 26, 1960, four out of seven justices of the Pennsylvania Supreme Court reaffirmed their acceptance of the M'Naghten Rules. Action by the legislature is needed. In the federal system, with regard to crimes against the United States Government, it is to be hoped that the Durham and Currens cases will be followed in other circuits and approved by the Supreme Court of the United States. In this way the administration of justice may be improved by incorporation of the advances achieved by the medical profession in the field of mental illness and its appropriate treatment.



More and more the family doctor is becoming involved in industrial medicine. The author outlines the thinking which should accompany the evaluation of possible exposure to a potentially toxic agent.

## Diagnosis of Occupational Disease Caused by Chemical Agents\*

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Accurate diagnosis of diseases of occupational origin is difficult for many physicians for several apparent reasons.

One is that treatment of occupational diseases, although involving a large proportion of practicing physicians, does not constitute a large segment of their individual practice. Also, many physicians are not aware that a "job title" may not indicate the true nature of the work being done and so do not think of further connection to occupation. A locomotive engineer, for example, could receive an exposure to a volatile gas if, in the course of switching in the yards, there was a leakage of the rupture disc on a tank car. Then too, many physicians have never availed themselves of the opportunity to visit industrial plants and learn of the various agents that may cause illness as a result of undue exposure. In general, the possible effects of chemical agents are not as well known to physicians as the common diseases and irritants they encounter daily in their practice. The common texts and reference books in physicians' offices usually do not give more than a brief statement that a chemical may produce toxic effects in undue concentration and that appropriate practice measures should be taken. Such statements only add to the confusion and uncertainty. Another factor that has had a definite effect in recent years are the so-called "miracle drugs." Treatment is often started with these drugs before a definite diagnosis has been made. In many cases prompt and favorable response of the illness occurs, and often a definite diagnosis is never established. This approach to problems of occupational disease creates chaos because of the failure to identify cause-

effect relations. For example, it is often concluded that since a person has been exposed to a particular substance all his symptoms are necessarily a result of this contact. Frequently the patient will suggest to the physician that some material he uses in his employment, but whose name he does not know, was undoubtedly the cause of his illness as he started to feel ill the next day. Little wonder that confusion exists in this area!

### Diagnosis

The diagnosis of a disease suspected to be occupational should be as accurately made as that of pneumonia or other disease, although frequently much more difficult and time consuming. Many apparently related phases must be investigated, and perhaps trips to the patient's place of employment will be necessary. Accuracy of diagnosis is indispensable to correct treatment and restoration of health. Another consideration is that occupational diseases present medicolegal implications not present in other illnesses. The Workman's Compensation Law of the State provides certain assurances for the patient with illness of occupational origin. It is also intended that it should protect the employer against unjust claims alleged to have arisen out of employment. Many physicians can do either patients or the local industrial plants injustices by making diagnoses of occupational diseases without conclusive medical proofs or by neglecting to investigate illnesses of possible occupational origins. Both possibilities must be considered.

When presented with a patient whose occupation may possibly be of importance, a logical sequence should be followed. The history should include what the patient does on his job. What are the possible offending

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agents to which he may be exposed at this job? Are any of these agents capable and known to present recognizable clinical syndromes? Was the patient actually exposed to any of the possible offenders? Offending agents may be present on the job without the patient having had any actual exposure. This is a fact frequently observed by men engaged in full-time occupational medical departments. If he was actually exposed, was the exposure of sufficient time, length and concentration to produce illness? There is much misunderstanding on this point. Many patients assume that because they have been in contact with some noxious substance this is automatically equivalent to symptom-producing over-exposure. Obviously this is not true. Most of us are exposed to carbon monoxide during winter months, but rarely does this occur in enough concentration for sufficient time to produce symptoms except in those with suicidal intent. Was the contact with the suspected agent in a form which will produce physical change? Beryllium is obtained from beryl ore and the handling of this does not produce harmful effects, nor does beryllium metal or oxide. Inhalation of beryllium dust, however, can produce beryllium intoxication.

Applicable physical examinations and laboratory investigations should be made, as for any other diagnostic problems. Some laboratory procedures may be outside the scope of the usual hospital or medical laboratory and should be referred to laboratories which are capable of such procedures.

When all the facts have been assembled, an attempt is made to correlate these with the recognized physical effects of the suspected agent. Here the physician frequently must seek information outside his usual references. Where plants have full-time medical departments, a telephone call to the physician there will be very productive. He is usually aware of most of the chemicals used and their possible toxic effects. He, too, will be useful in translating trade names into basic chemicals. If he does not have the information at the moment, his knowledge of the plant and contacts there will enable him to secure it readily. In many of these plants all new substances are reviewed and catalogued by the industrial

hygiene section as they are introduced. Thus, potential hazards are recognized; and if their possible toxicity outweighs their usefulness, they can be rejected. Carbon tetrachloride, for instance, is not allowed in many plants. In others, it may be used only under certain rigid requirements and under direct supervision of the industrial hygienist. In smaller plants the industrial nurse may be able to give the information desired. Occasionally, the physician may find it necessary to visit the plant itself to get a logical idea of the physical layout as it pertains to his problem.

Are the symptoms, physical findings and laboratory findings compatible with the known effects produced by the suspected agent? This is what Johnstone<sup>1</sup> describes as the "matching process." Have these effects been produced in the time interval in which the agent is known to produce symptoms? Certain substances may produce immediate symptoms and findings when present in sufficient concentration. Others may delay from hours to days in producing ill effects. Nitrogen, an inert gas, when introduced into a closed space produces its effects by replacing the available oxygen and asphyxiation results. If a patient is removed from an area in which this has occurred to normal atmospheric conditions, he will be completely restored without further treatment. If he is rescued within four to five minutes no residual effects are to be expected. Nitrogen dioxide fumes arising from fuming nitric acid, or as generated for a few days in a freshly filled silo, may reach a dangerous concentration with the patient experiencing only a little burning of the eyes and throat and a little hacking cough. If he then leaves the area these symptoms will subside and he will feel perfectly well only to suddenly develop acute pulmonary edema eight to twelve hours later. The importance of an evaluation of symptoms in relation to intervals since exposure is evident from these illustrations.

As an illustration to point out some of the problems involved in the "matching process," the following case report is informative:

A patient was seen at noon July 13, 1961, with history of nausea, vomiting, diarrhea, weakness with onset the preceding night. The initial im-



pression was acute gastroenteritis. There was a community wide illness of this type at this time and many persons had been seen with it. The patient was sent home from work with instructions to report to his family physician for treatment.

On July 17, the family physician called the plant where patient was employed stating he was investigating the possibility that the illness might be due to some toxic material with which he had worked. The physician had secured the history that the patient felt dizzy and drowsy after using a cleaning fluid to clean a floor. Investigation revealed that the fluid was trichloroethane. (This a solvent for oils, wax, tars and as such is widely used in industry.) With these facts the patient was interviewed and a chronologic sequence of events was reconstructed.

July 10. He cleaned a floor with the solvent using a long handled mop and bucket. Ten to fourteen gallons of solvent used. He began this at about 7:30 A.M. and finished at approximately 10:00 A.M. Double doors in the front of area and single door on the side were open to provide ventilation. After starting the job he became drowsy and "light-headed." He went outside three to four times for 10 to 15 minutes at a time as he found this would decrease the vertigo and drowsy sensation. After completion of the job he noted that he was tired and had some drowsiness the remainder of the day.

July 11. The patient did usual work but felt a little tired and drowsy. He had had a slight headache for several days.

July 12. There was some drowsiness but definitely less than on previous days. A slight headache still present but he felt well otherwise. This night he suddenly developed nausea, diarrhea, cramps and vomited.

July 13. He was nauseated, without vomiting, and had occasional abdominal cramps, with one scant watery stool. He felt very weak, more so than any time during the week.

July 14. He was weaker than on the previous day. There was no vomiting or diarrhea, and the abdominal cramps had ceased the preceding day.

July 15. He felt improved but still was weak but without other symptoms. After this date there was rapid improvement of all symptoms.

The patient recalled that he had cleaned same area approximately 3 weeks previously with the same solvent and technic. He did not use as much of the solvent on this occasion nor did he take as long to do the job. He did get drowsy while doing this but had no other symptoms. On two other occasions he had used trichloroethane to wipe up oil in well ventilated areas. On one of these times he became drowsy and the other he did not. In the latter case he only used very small amounts for a short time in a well ventilated area.

### Comment

Trichloroethane is a chlorinated hydrocarbon which is an excellent solvent. Its toxic effect is chiefly on the nervous system to produce narcosis which is transient in nature. Complete recovery is to be expected following removal of person from contact with the vapors.

This individual was without doubt exposed to a concentration of trichloroethane that produced the drowsiness and vertigo he experienced. The effects gradually cleared up when he was no longer exposed to it. On the night of July 13 he had an onset of nausea, vomiting and diarrhea for which he was sent home from work the following day. Knowing that the effects of trichloroethane produce transient narcosis and not intestinal disturbance, it is clear these latter effects were from some other source. The history of a previous milder exposure to the solvent which had produced milder symptoms of narcosis without intestinal disturbance further emphasizes this. The conclusion is that this patient had proven exposure to a solvent that produced definite physical effects. As he was recovering from this he contracted a gastrointestinal infection, and this was the condition when he first sought medical aid.

The basic considerations are well summed by Col. A. J. Rapalski, Chief of Preventive Medicine Division, Office of the Surgeon General, at the 89th annual meeting of the American Public Health Association.<sup>2</sup> These were:

1. There must be a demonstrated industrial exposure to a toxic agent.
2. The industrial exposure must be of sufficient dosage and time to produce a response.
3. A clinical syndrome exists which is typical of the response to this agent and is not recognizable as something else.
4. The causative agent under consideration has been shown to be capable of producing the syndrome in man.
5. Removal from exposure usually results in improvement.

### References

1. Johnstone, Rutherford T.: Occupational Diseases—Diagnosis and Proper Methods of Reporting, J.A.M.A. 168:1844, 1958.
2. Rapalski, A. J.: Indust. Hyg. News Rep. 5: (Feb.) 1962.

# Home Emergency Treatment of Acute Pulmonary Edema: Early use of Intermittent Inspiratory Positive Pressure Breathing (IPPB I.)\*

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For the past 7 years I have carried in my automobile trunk an apparatus for administering *intermittent inspiratory positive pressure breathing* (IPPB/I) for emergency use (Fig. 1). I do not use it with every patient who has acute pulmonary edema, since many will respond to routine therapy. However, when response is not prompt I have found it valuable. The purpose of this paper is to review the use of IPPB/I and to present experiences with it as a home emergency measure.

In the treatment of certain chronic lung diseases the use of IPPB/I is well established. The use of IPPB/I in acute pulmonary edema is also widely accepted, but for the most part has been limited to the hospital emergency room and in-patient therapy. There has not been nearly as much authoritative enthusiasm for this form of therapy in

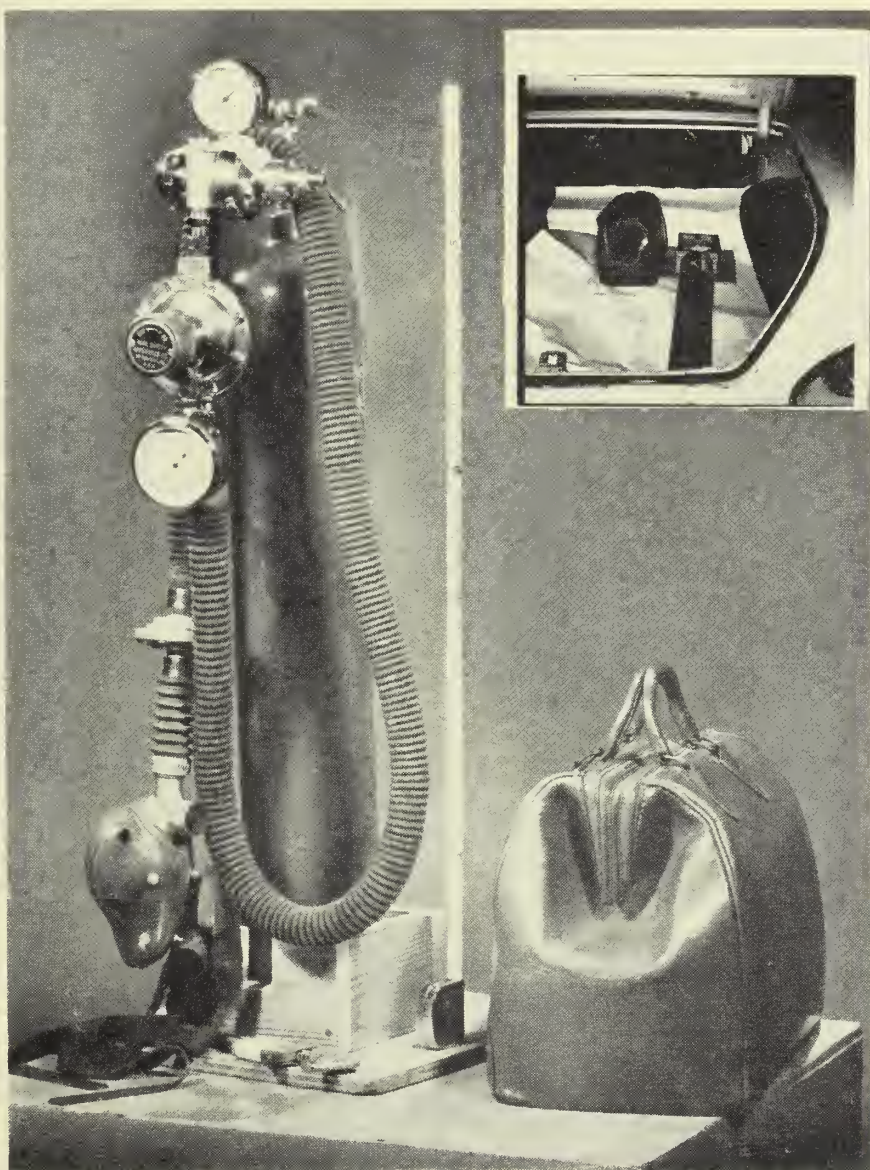


FIG. 1. Apparatus for IPPB/I administration attached to oxygen cylinder.

acute pulmonary edema as in chronic lung disease at the clinical teaching level. Altschule<sup>1</sup> discusses positive pressure res-



piration in a negative way, stressing mainly the physiologic effects of increased airway pressure, with no mention of intermittency or phase (expiratory or inspiratory) at which pressure is present. Harrison and Resnick,<sup>2</sup> in discussing oxygen therapy, state that additional benefit may be obtained by administering oxygen under positive pressure but do not elaborate. Stead<sup>3</sup> states that oxygen by mask, tent or catheter may be useful but makes no mention of positive pressure breathing. Yet, Barach,<sup>4</sup> in 1838, reviewed previous reports of the use of positive pressure respiration and presented evidence of its beneficial effect. The development of the Burns valve (Pneumatic Balance Resuscitator<sup>5, 6, 7</sup>) and the Bennett valve<sup>8</sup> during World War II provided an excellent means of administering oxygen (or air) under pressure in a variety of ways. The Burns valve was the answer to the Air Force's problem of automatic resuscitation during high altitude flying. Its construction is ingenious but simple, with no moving parts other than two rubber diaphragms. It converts continuous positive pressure into an intermittent positive pressure. The valve is sensitive to pressure and will produce a mask inspiratory pressure of about 85% of the pressure setting (5 to 35 cm. water) and then will close (expiration), and not open again until the mask pressure is about 15% of the pressure setting. It will do this whether there are active respiratory movements or not. The Bennett valve is more complex and more versatile. It is sensitive to flow and requires some respiratory activity to cycle it. It can be made to cycle automatically but this has to be done by a specific adjustment.

For home use I have found the apparatus utilizing the Burns valve to be practical and efficient. Virtually no special handling or maintenance has been required. The apparatus consists of a high pressure regulator with a gauge indicating oxygen cylinder pressure, a low pressure regulator equipped to reduce the outlet pressure to a range from 5 to 35 cm. water, and flexible tubing which connects to the Burns valve, which, in turn is connected to a positive pressure mask. With the mask in place, on a conscious patient, there is no necessity for the patient voluntarily to change his respiratory

pattern. Because of the pressure inspiration will be deeper and thus longer in duration. In turn, with expiration, there will be no pressure in the mask other than that associated with normal expiration until the expiratory pressure is within 15 or 20% of the previously set pressure. Thus the expiratory cycle will be shortened somewhat. Patients usually adjust easily to the procedure.

Acute pulmonary edema occurring at home is most often due to one of the forms of valvular or degenerative heart disease. With acute left ventricular failure the pulmonary vascular bed becomes engorged, the alveoli become filled with a serous fluid, and over a variable period of time there will either be clearing or progression. With progression, the bronchial tree becomes filled with a frothy fluid. This train of events usually occurs at night after the patient has been asleep for some time. If it occurs in a hospital prompt care can be given. However, if it occurs at home, as is often the case, there may be considerable progression of the process over the period of time from onset to the start of therapy.

On arrival at a home with a patient presenting evidence of acute pulmonary edema I administer the usual treatment. I apply tourniquets to the extremities, and give morphine sulfate, 15 mg. and atropine sulfate, 0.4 mg.—approximately one-half intravenously and the remainder subcutaneously. If the patient is wheezing, I give aminophyllin intravenously. If the patient has not been digitalized I give deslanoside intravenously—1.6 mg. If after these measures the patient has not significantly improved or if his condition seems worse, then I start IPPB/I.

In patients with acute pulmonary edema, it is impossible to know in any given situation if the use of IPPB/I will be essential for recovery, but whether it is essential or not, it will greatly shorten the duration of the discomfort. Usually response is prompt and there is no further immediate difficulty. Often hospitalization can be avoided, or deferred to a more convenient hour. At times response is not so prompt and even after improvement to a point where the treatment can be discontinued, the process may quickly recur.

I have not had any deaths in a home while administering IPPB/I, even though in several instances the patient had lost consciousness in the course of the attack. One death occurred while it was being administered to a hospital in-patient who had developed acute pulmonary edema two weeks after a massive myocardial infarction. This patient was also in shock and coughing up frothy fluid. Although the pressure was only very gradually increased, the therapy may have done more harm than good.

The question of the use of IPPB/I on a patient in shock warrants some discussion. Miller and Sproule<sup>10</sup> have made detailed studies of patients with various primary diseases, who developed acute pulmonary edema and were treated with IPPB/I. They did not think that in any instance hypotension or shock was made worse by IPPB/I. This may not hold true for all patients with degenerative heart disease as contrasted to patients with basically normal hearts prior to the illness which precipitated the attack. Segal and associates<sup>11</sup> believe that patients with circulatory inadequacy should not be injudiciously exposed to positive pressure breathing. There might be a further drop in cardiac output and this might offset any benefit from the improved ventilation with oxygen. Cournand and his group<sup>9</sup> have pointed out that with IPPB/I there is not likely to be any change in cardiac output, as contrasted to continuous positive pressure breathing (during expiration as well as inspiration).

When one feels that IPPB/I is necessary in a critically ill patient, to be forced to stop it after it is started because of the exhaustion of the oxygen supply it is not good. Sometimes I have had to continue IPPB/I for as long as 2 hours at home before the patient could remain comfortable without supplementary oxygen. Obviously, the small cylinders mentioned by Barach, Pons and Berg<sup>12</sup> for early use in coronary thrombosis are inadequate for prolonged IPPB/I therapy, as are even the medium sized tanks. In these situations additional tanks can be obtained from private companies or the city Fire Department. In the Memphis area, and probably in any other urban area, it is easy to obtain a large tank of oxygen

promptly through the Fire Department. One disadvantage of this service is the fact that several fire engines and many firemen accompany the tank. In a rural area a physician would be wise to have a large tank of oxygen in the trunk of his automobile, as well as several small ones.

### Summary and Conclusion

The use of intermittent inspiratory positive pressure breathing (IPPB/I) in the treatment of acute pulmonary edema as a home emergency measure has been discussed and is feasible and valuable.

I am indebted to Dr. Marcia Anderson for aid in preparing this manuscript.

### References

1. Altschule, M.D.: Acute Pulmonary Edema. New York, Crune and Stratton, 1954, P. 55-56.
2. Harrison, T. R. and Resnick, W. H.: Principles of Internal Medicine, Ed 3, New York, McGraw-Hill, 1958, P. 1308.
3. Stead, E. H., Jr.: (in Cecil & Loeb.) A Textbook of Medicine, Ed 10, Philadelphia, W. B. Saunders Co., 1959, P. 1187.
4. Barach, A. L., Martin, J. and Eckman, M.: Positive Pressure Respiration and Its Application to the Treatment of Acute Pulmonary Edema, *Ann. Int. Med.* 12:754, 1938.
5. Burns, H. L.: Pneumatic Balance Resuscitator, *Air Surg. Bull.* 2:306, 1945.
6. Motley, H. L., Cournand, A., Eckman, M. and Dickson, D. R., Jr.: Physiological Studies on man with the Pneumatic Balance Resuscitator, "Burns Model." *J. Aviation Med.* 17:431, 1946.
7. Jacobs, H. J.: The Burns Pneumatic Balance Resuscitator, *J. Aviation Med.* 18:436, 1947.
8. Motley, H. L., Werko, L., Cournand, A. and Richards, D. W., Jr.: Observations on the Clinical Use of Intermittent Positive Pressure, *J. Aviation Med.* 18:417, 1947.
9. Cournand, A., Motley, H. L., Werko, L., Richards, D. W., Jr.: Physiological Studies of Effects of Intermittent Positive Pressure Breathing on Cardiac Output in Man, *Am. J. Physiol.* 152:162, 1948.
10. Miller, W. F. and Sproule, B. J.: Studies on the Role of Intermittent Inspiratory Positive Pressure Oxygen Breathing (IPPB/I-02) in the Treatment of Pulmonary Edema, *Dis. Chest* 35:469, 1959.
11. Segal, M. S., Salomon, A., Dulfano, M. J., and Herschfus, J. A.: Intermittent Positive Pressure Breathing—Its Use in the Inspiratory Phase of Respiration, *New England, J. Med.* 250:226, 1954.
12. Barach, A. L., Pons, E. R., Jr. and Berg, J.: Early use of Oxygen in Coronary Thrombosis, *J.A.M.A.* 174:1276, 1960.



## CLINICAL NOTES FROM THE TENNESSEE HEART ASSOCIATION

### ON THE INDICATIONS FOR LONG TERM ANTICOAGULANTS

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The use of anticoagulant drugs in certain acute illnesses has become well established with reasonably well accepted indications. The use of these drugs in chronic illnesses is a less familiar problem, and there is very little agreement as to the indications for the long term use of anticoagulant drugs in cardiovascular diseases. This brief note will discuss these indications in the light of current studies.

Three recent articles will be analyzed for the answer to these questions as regards long continued use of drugs of the coumarin or phenindione groups in coronary artery disease: (1.) What is the effect on overall mortality after acute myocardial infarction; can we expect a second or subsequent infarctions to be prevented; and how long after infarction should anticoagulants be continued? (2.) Is the onset of coronary insufficiency without infarction an indication for chronic anticoagulant treatment? (3.) Do complications such as prior infarction, congestive heart failure, diabetes, or hypertension alter the indications? (4.) Do the sex and age of the patient alter the indications?

In answer to the first question posed there is general agreement that the mortality rate is reduced by long continued anticoagulants, but the figures of the British group are of borderline significance as compared with a better than two-fold drop in mortality reported by Kuhn's group.<sup>1-3</sup> The design of the study reported by Thomes, Scallen and Savage<sup>2</sup> seems to supply the answer to the second part of this question—that is, the benefit from anticoagulant treatment continues "over a period of at least several years," and the treatment must be continued to maintain this benefit. In other words, it would appear that the drugs must be continued permanently. The third part of this first question,—is the incidence of re-

current myocardial infarction reduced by treatment, is answered in the affirmative by all three studies. The reduction in recurrence of infarction is the most impressive single result of long term treatment following initial myocardial infarction.

As regards the second question, none of the three papers under consideration offers direct data bearing on the use of anticoagulants following the onset of angina pectoris without demonstrable infarction or in "impending infarction." Many physicians will assume that these patients should be treated as if the episode amounted to an acute infarction, but a more direct answer would be desirable.

There is apparently reason to believe that the use of anticoagulants is more important if there is a history of prior infarction.<sup>1,3</sup> There is no clear pattern of influence of other cardiac complications such as the presence of heart failure or diabetes. Hypertension has not been demonstrated to be a contraindication.

Probably women can expect protection from anticoagulants as well as men, but the data on this point is not conclusive. As regards the effects of age, the British study particularly demonstrated an enhanced protection in the younger aged men.

It is apparent from these (and other) papers that selection of the patient with coronary artery disease for long-term anticoagulant therapy remains a haphazard business with much to be gained (or lost) by the validity of the physician's decision. It seems certain, however, that the properly selected patient stands to benefit significantly from long continued anticoagulants after the onset of clinically apparent coronary disease.

A consideration of chronic anticoagulants for cerebral vascular occlusive disease is even more complex than is the case with coronary artery disease. Ischemic diseases of the brain presents in so many ways and the natural history of the disease is so uncertain that investigators have so far failed to adequately classify the clinical types for adequate study. Moreover, most of the studies in progress have not yet been continued for adequate periods of time.

If hemorrhage and embolism are excluded, a cerebral occlusive episode may be

considered to occur in three stages: transient ischemic episodes without neurologic sequelae; progressive thrombosis over a period of several days or even weeks; and the completed infarction. It is readily seen that such an arbitrary breakdown is not always possible, and it is likewise often impossible to differentiate a thrombotic process from an embolus or even a hemorrhage. It is clear, however, that every effort must be made to make these distinctions before including any patient in a program of long-term anticoagulant treatment.

There is at present remarkable agreement that anticoagulants are effective in the treatment of the patient with transient cerebral arterial insufficiency in that the number of attacks may be considerably reduced. There is less clear cut evidence that such treatment either prevents later infarction or death. Compare Siekert,<sup>4</sup> whose figures indicate that there is reduction in later infarction and who cites other similar reports with those of Fisher<sup>5</sup> whose smaller study indicates no reduction in late infarction. Likewise, another long-term cooperative study finds no significant reduction in late infarction when anticoagulant therapy is instituted following the onset of transient ischemic episodes.<sup>6</sup>

Going on to consider the problem of progressive cerebral infarction as a separate category we find that control studies are few and far between. A report by Carter<sup>7</sup> shows an improved survival rate which was due to prevention of pulmonary infarction rather than to prevention of progression of the ischemic disease of the brain. This study did not include long-term anticoagulant follow-up and gives no data regarding the possible long-term protective influence of anticoagulants. Further, it is difficult to state whether the cases as reported by Carter can properly be called progressive cerebral infarction or should be classified as completed infarction. The cooperative study reported by Fisher, in considering the progressive cerebral infarction group, fails to find improved immediate mortality in those treated with anticoagulants, but there is apparently significant protection from late infarction by chronic anticoagulant therapy.

From a numerical point of view it would

be of greatest importance to know the effect of long-term anticoagulants for the patient with the completed cerebral infarct. If unequivocal long-term help can be demonstrated it would follow that all patients with a past history of cerebral thrombosis should be evaluated for such treatment. At the present time such unequivocal evidences is not available. However, a recent report from Groch and associates<sup>8</sup> presents convincing evidence that anticoagulant treatment does prevent recurrent cerebral infarcts. Again the less encouraging view comes from the cooperative study already mentioned; they found no improvement in mortality on anticoagulants and a very high incidences of deaths from hemorrhagic complications in the patients with completed cerebral infarction maintained on anticoagulants.

Embolism as the cause of cerebral infarction must certainly be considered apart from cerebral thrombosis since the pathogenesis of these diseases is often entirely different. The present total of all controlled studies of anticoagulants in prevention of recurrent cerebral embolism does not include very many patients and certainly no valid conclusions are possible; however, a summary<sup>9</sup> of studies published prior to 1958 indicates a reduction in frequency of embolization following institution of anticoagulant treatment. If embolization as it occurs in rheumatic heart disease with atrial fibrillation is considered by itself, the value of anticoagulants seems generally accepted. Treatment of cerebral emboli apart from chronic rheumatic heart disease seems less obviously an indication for anticoagulants; in fact there are recent and careful studies, although small in numbers of patients, which cast doubt on the value of anticoagulants in cerebral embolic disease.

For some years now physicians have found a considerable use for anticoagulants in peripheral vascular diseases. In certain acute illnesses indications are generally accepted, but again there is less agreement as to the use of anticoagulants in chronic peripheral vascular disease. Certainly most clinicians feel that recurrent or chronic thrombophlebitis is an indication for long-term anticoagulation, particularly if there has been pulmonary embolization. There



has been much less experience in the use of anticoagulants for chronic arterial occlusive disease; to my knowledge there are no controlled studies relating to this problem, and it is difficult to imagine how a satisfactory study might be designed in view of the extremely variable natural history of arteriosclerotic occlusive disease of the aorta and lower extremities. It is my opinion that no meaningful statement can be made at the present time about the indications for the use of anticoagulants in such conditions. Probably anticoagulants will find their greatest use in this area where there has been recent progression of the occlusive process, and when definitive vascular surgery is contraindicated.

### References

1. Report of Working Party on Anticoagulant Therapy in Coronary Thrombosis to the Medical Research Council, *Brit. Med. J.* 1:83, 1959.
2. Thomes, A. B., Scallen, R. W., and Savage, I. R.: *J. A. M. A.* 176:181, 1961.
3. Kuhn, P. R., Van Ness, A. L., Jones, R. J., and Bay, E. B.: *Arch. Int. Med.* 108:884, 1961.
4. Siekert, R. G., Millikan, C. H. and Whisnant, J. P.: *J. A. M. A.* 176:19, 1961.
5. Fisher, C. M.: *Neurology* 11:119, 1961.
6. Baker, R. N.: *Neurology* 11:132, 1961.
7. Carter, A. B.: *Neurology* 11:601, 1961.
8. Groch, S. W., McDevitt, E., and Wright, I. S.: *Ann. Int. Med.* 55:353, 1961.
9. Friedberg, C. K.: *New York J. Med.* 58:877, 1958.

### Nursing Schools Admit 76,469 Students in 1961

Schools of professional and practical nursing in the United States admitted 76,469 students during 1961, an increase of almost 3,000 over the 73,565 admitted the previous year, Fred C. Foy, chairman, Committee on Careers, National League for Nursing, New York, announced today.

The 1,126 programs of professional nursing in hospitals, junior and senior colleges, and universities accepted 51,219 new students, compared to 49,787 in 1960, Mr. Foy reported. Admissions to the 693 practical nursing schools rose from 23,778 to 25,250 during the same period.

The majority of students entering professional nursing selected three-year diploma programs in hospitals and independent schools of nursing. They represented 77% of the total, or 39,364. Another 9,287, or 18.2%, entered colleges or universities to study for bachelor of science degrees in nursing. The remaining 2,468 students, or 4.8% of the total, chose two-year associate degree programs in junior and community colleges.

Although diploma programs continued to hold the lead, as in the past, their percentage of the total admissions dropped during 1961, while those for both bachelors and associate degree programs rose. The National League for Nursing has estimated that 33% of the professional nursing force should be prepared in college and university programs to meet the requirements for beginning jobs in public health nursing and for the graduate study desirable in the other leadership areas

where shortages are pressing—teaching, administration, expert clinical practice, and research.

The 1961 admissions to professional schools filled the schools to 90 per cent of their capacity for freshmen students. An important factor, therefore, in increasing the nurse supply of the nation is the need for more classrooms, housing, clinical facilities, and qualified teachers for nursing schools. There were 1,404 reported budgeted vacancies in nursing school faculties in 1961.

The ratio of 231 professional nurses per 100,000 population employed full time in the United States in 1960 is far short of the 300 per 100,000 considered a minimum goal. There were 504,000 employed professional nurses in 1960, some 90,000 of whom were working part time. Approximately 240,000 practical nurses held licenses in 1959.

Statistics on nursing education are gathered annually by the National League for Nursing through questionnaire surveys to all state-approved schools of practical and professional nursing in the country.

The Committee on Careers, which serves as the national clearing house for information on nursing education and opportunities as well as the central agency for nurse recruitment, is co-sponsored by the American Hospital Association, the American Medical Association, the American Nurses' Association, and the National League for Nursing. Mr. Foy, who has served as volunteer chairman since 1960, is chairman of the board, Koppers Company, Pittsburgh.

## STAFF CONFERENCE

### Nashville General Hospital\* Hydramnios

DR. FRANK WHITACRE: One of the uncommon and difficult to treat complications of pregnancy will be considered in today's conference. The case report will be presented by Dr. Kenneth Hurlocker.

DR. KENNETH HURLOCKER: *Present Illness:* This 28 year old white Gravida II, Para I, was admitted to the hospital Feb. 17, 1962, with the chief complaint of pregnancy, accompanied by an overdistended abdomen with acute abdominal pain which began 3 to 4 months prior to this admission and progressively grew more severe.

The last normal menstrual period was Aug. 1, 1961 with EDC May 8, 1962. The estimated length of gestation was 27 weeks. The pregnancy had been complicated by rapid weight gain for 1 month, without significant hypertension or albuminuria and only slight pitting edema of the lower extremities. There was a 16 lb. weight gain during the month preceding admission, and a total gain of 45 lbs.

The patient had complained of vague abdominal pain for several months, but 2 days prior to admission the pain had become more severe and was described as a "sharp tearing pain" just below the umbilicus.

The patient was placed on diuretics, low sodium diet and 3500 cc. oral fluid daily and observed for suspected rupture of the uterus. No evidence of uterine rupture was found and the patient was discharged on the 2nd hospital day, only to return for her present admission 6 days later, Feb. 23, with more abdominal distension and increasing discomfort.

*Past History.* The patient's previous pregnancy 3 years prior to the present one was complicated by severe pre-eclampsia and was terminated by a low cervical cesarean section near term. She had rather marked ileus with abdominal distention following operation, but otherwise had a satisfactory postoperative course with no evidence of residual hypertensive vascular disease.

There was an abnormal glucose tolerance test during the first pregnancy, but never any clinical diabetes and her tolerance test returned to normal following delivery.

*Physical Examination.* The general physical examination revealed a well developed, well nourished woman in moderate distress, complaining of abdominal discomfort and dyspnea. B.P. was 120/76, P. 88, R. 24 and T. 98.6° F., weight 161½ lbs. The ears, eyes, nose and throat were not remarkable. The lungs were clear to auscul-

tation and percussion. Examination of the heart revealed a normal sinus rhythm without a murmur and no evidence of cardiac enlargement.

On abdominal examination the uterus was found to be greatly distended and tense. The fundus was at the level of the xyphoid measuring 50 cm. from the symphysis to the fundus and 112 cm. in circumference at the level of the umbilicus. Fetal heart tones were faint, but counted at 140 per min. in the left lower quadrant. There were no localized areas of tenderness to indicate separation of the uterine scar. Fetal parts could not be palpated.

Pelvic examination revealed the cervix to be soft, uneffaced with no dilatation. The presenting part could not be palpated.

The extremities were not remarkable.

*Laboratory Findings.* X-ray examination one month prior to admission was read as a single fetus, well developed, cephalic presentation corresponding to the calculated gestation. Hydramnios was also evident. WBC. count was 12,900, Hbg. 10 Gm., PCV. 31%. The urine was negative in all respects. Serology test for syphilis was non-reactive. Serum glucose was 86 mg. fasting and 112 mg. 2 hours postprandial. N.P.N. was 25 mg. per 100 ml. Daily urinalyses for albumin and glucose were negative.

*Hospital Course.* The clinical impression on admission was intrauterine pregnancy, 27 weeks gestation with acute, severe hydramnios.

Because it was thought necessary at this time to relieve the uterine distention, 900 cc. of amniotic fluid was removed trans-abdominally by means of a polyethylene catheter inserted through a 13 gauge needle on February 24. The catheter was removed because of technical difficulties. The patient experienced mild lower abdominal cramps the following morning which lasted only 30 minutes.

On Feb. 26, 1600 cc. of amniotic fluid was removed without difficulty and on Feb. 27, 1100 cc. of fluid was removed making a total of 3600 cc. The patient's uterus was much softer following amniocentesis, and she experienced marked relief of symptoms.

Abdominal cramps developed after the last aspiration, and in spite of medications (Diladene, Vasodilan and Lutrexin) the patient established definite labor approximately 12 hours later. A low cervical cesarean section was performed with delivery of twins.

Number one weighed 2 lbs., 12½ oz.; the second weighed 3 lbs. 3¼ oz., and had an abnormal configuration of head and distended abdomen. Both infants did poorly from birth, having delayed, sluggish respiration and they expired within several hours.

Autopsies were performed and revealed only prematurity as the cause of death.

The mother had an uncomplicated post operative course.

DR. WHITACRE: The normal amount of amniotic fluid at or near term is from 1,000

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to 1,200 cc. Therefore, an excess of this amount must be considered as hydramnios. In cases where the accumulation is gradual, it is spoken of as chronic hydramnios, and where the accumulation is rapid, acute hydramnios. The fluid, however, is identical in composition and appearance with that found in normal pregnancy.

It is probable that accumulations of 2,000 to 3,000 cc. are relatively common, and that the more marked increase in the volume of fluid is at least not frequent. The diagnosis of borderline cases, obviously is up to the judgment of the individual observer, which accounts for the different estimates of the incidence of this condition. Some reports mention an incidence of 1 in 200 cases, while others 1 in 700 to 800 cases.

It would seem that the abnormal physiology is not a matter of excessive production of fluid, but rather a defect in absorption of this fluid; and a relatively slight defect in absorption could lead to development of the condition in its chronic state. The usually accepted explanation for hydramnios is the deficient removal of amniotic fluid, and that the transfer of water is of such volume that a difference of only a few cubic centimeters per hour in the rate of exchange can develop the syndrome.

This particular patient presented other problems in addition to the markedly distended uterus and the distress of the patient. We were confronted by the possibility of the separation of a previous cesarean section scar. This was especially impressed upon us by the patient's complaint of midline subumbilical abdominal pain.

DR. J. ROBERT THURMAN: Many reports indicate that hydramnios is associated with multiple pregnancies as occurred in

this particular case, but other unusual or abnormal conditions in pregnancy are more frequent, for example, diabetes and toxemia, especially pre-eclampsia.

DR. TROY BOHANNON: We were interested in the question of fetal anomalies in such cases. It would seem that they are relatively frequent, such as anencephaly, hydrocephaly, and stenosis of the esophagus. Outside of the peculiar and slight disfiguration of the head of one of these fetuses, no abnormalities were found at autopsy.

DR. WESLEY OSBORNE: Although prematurity of only 27 weeks gestation was present, it seemed that relief was mandatory.

DR. WHITACRE: This was a most unfortunate set of clinical circumstances. The patient had had a previous transverse low cervical cesarean section. The immense distention of the uterus made rupture of the old scar a possibility. There is no specific treatment for hydramnios. The diuretics which were used had little or no effect. Rupture of the membranes from below would be expected to initiate labor, at least it could not be done safely through the closed uneffaced cervix.

We agreed that transabdominal draining of fluid was undesirable, but it seemed to us that there was nothing else to do in order to relieve dyspnea; and in divided attempts we removed 3600 cc. of amniotic fluid.

Taking an x-ray film before tapping in an effort to locate the implantation of the placenta should be done.

Staff Conferences are often discussions of clinical successes, and we felt that it was desirable to discuss one of our failures, although other more effective treatment is at this time not apparent.

## CLINICOPATHOLOGIC CONFERENCE

### Vanderbilt University Hospital\*

#### Disseminated Lupus Erythematosus

A 30 year old colored laundress entered the Vanderbilt University Hospital Outpatient Department complaining of "stiff hands" on Jan. 21, 1947. Three months before entry the patient had developed painful swelling of both knees and legs without associated heat or erythema. One and a half months prior to entry, she had developed stiffness and nocturnal swelling of the small joints of her hands. Shortly before admission the patient experienced a bout of precordial pain radiating to the left arm which was associated with a dry cough and accentuated by inspiration lasting 48 hours. The patient denied previous sore throats or joint symptomatology.

*Past history* indicated that the patient had undergone a thyroidectomy 3 years before because of symptoms of tachycardia and palpitation. *Family history* revealed that the father had died of tuberculosis and the mother of hypertension.

*Physical examination* in the OPD revealed a B.P. of 145/95 mm. Hg., P. of 90 and R. of 20, and a T. of 98° F. The patient was a well developed, well nourished, colored woman in no acute distress. There was no significant adenopathy. The chest examination was normal and the lung fields were clear. The heart was slightly enlarged, the point of maximum impulse 2 cm. outside the midclavicular line in the 5th interspace. The rhythm was normal, and there was no detectable friction rub. An inconstant gallop rhythm was described at the apex, and a harsh systolic murmur was noted over the pulmonic area. There were no objective changes in the joints. The remainder of the examination including neurologic examination was within normal limits.

*Laboratory studies* included a urinalysis showing a urine specific gravity of 1.005, a 1+ test for protein, and no sugar. The urine sediment had 25 WBC., 10 to 20 RBC. and many granular casts per h.p.f. The Hgb. was 9 Gm. and PCV. 26%. The WBC. count was 6,100 cells per cu. mm. with a normal differential picture. The Kahn test was negative. An EKG. showed abnormal ST segments compatible with myocardial disease, possibly anterior infarction. The chest x-ray is shown in figure 1. Cardiac fluoroscopy revealed good cardiac pulsations with generalized cardiac enlargement.

*Outpatient course.* During the next 3 weeks the patient was followed in the OPD. She was started on aspirin and sodium bicarbonate which

brought transient relief from her arthralgias. Blood pressure reading ranged from 145 to 150 over 100 mm. Hg. Because of increasing pain in her joints, the patient was admitted to the hospital on Feb. 11, 1947. Additional history at the time of admission indicated that weakness, anorexia, and joint symptoms had begun one month after delivery of her last child. Two tarry stools had been noted, and she had developed a scaling eruption over the face and chest. During her illness she had lost 50 pounds.

Physical examination on admission showed a B.P. of 184/150 mm. Hg., P. 80, R. 20 and T. 98° F. The patient appeared chronically ill with several excoriated scaly lesions over the lower face, chest, and anterior tibial surfaces. There were some pigmented papules over the left malar eminence. Moderate, generalized lymphadenopathy was noted. A movable mass was felt in upper outer quadrant of the left breast. The head, eyes, ears, nose and throat were unremarkable. There was no evidence of venous distention. The lungs were clear. There was cardiac enlargement to both the right and left of the sternum. The aortic second sound was accentuated. An aortic systolic murmur and an additional systolic murmur in the left third interspace were described. The spleen was palpable at 2 fingerbreadths. The pelvic examination was within normal limits.

Significant laboratory data included 4 urine specimens with specific gravity values ranging from 1.0008 to 1.022, a trace to negative tests for protein, no reducing substance, and 10 to 20 RBC., 8 to 10 WBC. and numerous granular casts per h.p.f. The RBC. count was 4.68 million per cu. mm., PCV. 31%, Hgb. 9.5 Gm. The E.S.R. was 32 mm. per hour. Four WBC. counts were all in the 6,000 cells per cu. mm. range. The differential leukocyte count was not remarkable. Examination of stained blood smears showed the red cells to be hypochromic and microcytic with some spherocytosis, poikilocytosis, and anisocytosis. A sickling preparation and the blood Wasserman were negative. The N.P.N. was 34 mm. percent. Total serum proteins were 6.95, albumin 3.76 and globulin 3.19 Gm./100 ml. Serum calcium was 9.1 and serum phosphorus 4.4 mg. percent. Two alkaline phosphate determinations were 11.1 and 10.4 Bodansky units respectively. Stool examination was negative for blood, ova and parasites. The basal metabolic rate was -19%. Venous pressure was 85 mm. of saline, arm to tongue circulation time 14 seconds. Chest x-ray films and fluoroscopy revealed generalized cardiac enlargement with good pulsations evident.

*Course in hospital.* Shortly after admission the patient was begun on thiamin intramuscularly and aspirin with some relief of joint symptoms. Her B.P. remained consistently about 170/140 mm. Hg. During the first week she developed tenderness and swelling over the volar tendons of the left wrist then right wrist which disappeared within 24 hours. There was no fever recorded during her hospitalization. On the 7th hospital day, a lymph node biopsy was obtained. Follow-

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ing discharge, the patient is reported to have died on May 1, 1947.

DR. DAVID E. ROGERS: This thirty year old colored woman had a rapidly progressive illness with death ensuing eight months after the initial onset of symptoms. Apparently a diagnosis was reached on examination of the lymph node biopsy obtained on her first hospitalization. To simplify our task, let us place her symptoms, signs and significant laboratory findings in a chronologic table:

#### Symptoms

1. 4.5 months—Delivery of a normal infant.
2. 3.5 months—Onset of weakness, anorexia, pain and swelling of the knees and legs.
3. 2 months—Stiffness, swelling of the fingers, appearance of a cutaneous eruption on face and chest.
4. 3 weeks—Transient episode of precordial pain accentuated by respiration, dry cough, headache and vomiting.
5. Following hospitalization—Transient swelling and tenderness over lower flexor tendons in each wrist. Total weight loss, 50 pounds.

#### Signs

1. Striking hypertension with a narrow pulse pressure.
2. Scaly pigmented eruption over face, chest and legs.
3. Generalized lymph adenopathy.
4. Questionable breast mass.
5. Massive generalized cardiac enlargement with murmurs.
6. Splenomegaly.
7. No detectable joint abnormalities.

#### Laboratory

1. Abnormal urine sediment with pyuria, microscopic hematuria and granular casts.
2. Hypochromic and microcytic anemia.
3. Normal leukocyte count and differential.
4. Elevated sedimentation rate.
5. Elevated serum globulins and alkaline phosphatase.
6. Chest x-rays showing marked generalized cardiac enlargement and clear lung fields.

I believe we can rapidly move to narrow the diagnostic possibilities. This young woman had evidence of a diffuse disease in-

volving many systems. Her history, physical findings, and laboratory examinations indicate that her skin, joints, myocardium and/or pericardium, kidneys, gastrointestinal tract, and the reticuloendothelial tissues (liver, spleen, and lymph nodes) were involved. Let us move rapidly through some of the less likely possibilities which were considered during this patient's hospitalization.

1. *Myxedema*. This woman had a history of previous thyroidectomy. The features of weakness, joint stiffness, apparent cardiac enlargement and anemia are compatible with myxedema. There is much however which is unexplained by such a diagnosis. The skin eruption does not suggest myxedematous infiltration. True arthritic symptoms are unusual, and the anemia of myxedema is generally macrocytic or normocytic. Hypertension is unusual. Renal changes are not seen. I believe we can discard this possibility.

2. *Acute rheumatic fever*. The onset of a migratory polyarthritis, changing murmurs, and cardiac enlargement in a 30 year old patient suggest this diagnosis. I believe we can rapidly eliminate it. First, in acute rheumatic fever with severe cardiac involvement, symptoms or signs of congestive failure are the rule. Fever and leukocytosis are almost always present in acute active rheumatic fever. Furthermore, her hypertension and evidence of renal involvement could not be explained by such a diagnosis.

3. *Specific infectious arthritis*. In a young colored woman with polyarthritis, gonococcal disease should be considered. It should be recalled that gonococcal arthritis is commonly polyarticular during its initial phases, but generally focalizes in one or more joints. No objective joint changes were noted in the present patient. Again, the significant hypertension, the cutaneous lesions, and the renal findings could not be explained by such a process.

4. *Rheumatoid arthritis*. This common disease of young women can be promptly eliminated. While migratory arthritis, adenopathy, an elevated sedimentation rate, and anemia are all common, hypertension and renal findings most definitely are not.

5. *Metastatic malignancy*. We have recently been impressed with the bizarre

myopathies which occasionally form the present complaint of patients who are subsequently shown to have localized or generalized malignancy. This woman had a possible mass in her breast. She was anemic. She had lost weight. I think this diagnosis unlikely. The anemia seen with disseminated carcinomatosis involving the marrow is commonly normochromic, and the presence of abnormal young forms in the peripheral blood is common.

6. *Malignant hypertension*. Rapidly progressing hypertension is common in the colored race in our community. While somewhat more common in males than in females, this possibility was seriously considered on her admission. I think there is evidence that can allow us to eliminate this diagnosis. First, malignant hypertension of this degree is associated with striking retinal changes and nitrogen retention. While left ventricular hypertrophy is common, generalized cardiomegaly is not. Further, the absence of congestive changes with such massive cardiomegaly would be unusual.

7. *Beri beri*. The administration of large doses of thiamin leads us to believe that the nutritional deficiency beri beri was suspected. No doubt, the massive cardiac silhouette suggested this. I believe the absence of other stigmata of thiamin deficiency such as peripheral neuritis and edema coupled with the striking hypertension and renal changes all render such a diagnosis untenable.

8. *Collagen disease*. The elimination of these possibilities allows us to consider the so-called "collagen diseases." The evidence suggests that this woman had one of the interesting connective tissue diseases so over diagnosed on our wards and at CPC's. These poorly understood illnesses are grouped together because they share certain histologic features in common. These features are: (a) inflammatory changes in connective tissue, (b) degenerative or "fibrinoid" changes in the ground substance of connective tissues. The extra cellular connective tissue structures which form the supporting framework of organs and blood vessels of the body make up a larger mass of body protoplasm than commonly recognized. The protein "collagen" represents almost 30% of the total body protein mass. These in-

teresting molecularly oriented proteins are imbedded in a ground substance matrix or cement composed primarily of polysaccharides. The mysterious diseases which involve these tissues ordinarily present with constitutional manifestations of fever, weakness, and progressive asthenia with evidences of focal involvement of the skin, joints, blood vessels, heart, kidneys, and reticuloendothelial system. On the basis of the distribution of lesions and the clinical sequence of events, we recognize several different entities.

In this instance, the absence of more impressive cutaneous involvement, the absence of muscular changes, GI tract symptoms, or peripheral edema allow us to eliminate two of these disease processes, *scleroderma* and *dermatomyositis*, from further consideration. The main differential diagnosis in the present case involves consideration of two disease processes—systemic lupus erythematosus and periarteritis nodosa. Let us return to consider the features outlined in the initial table in attempting to differentiate these processes.

1. *Sex*. The patient was a woman. Systemic lupus erythematosus is considerably more common in women. In most series, the incidence is 4 or 5 to 1, female to male. In contrast, periarteritis nodosa is a disease seen more commonly in men, the ratios generally running 3 to 1, male to female.

2. *Age*. The age of our present patient is of little assistance in differentiating these two diseases. Both commonly appear during the second, third, or fourth decades of life.

3. *Initial manifestations*. The initial manifestations here more strongly suggest systemic lupus erythematosus. This disease is most frequently ushered in by a migratory polyarthritis. Fever and a cutaneous eruption are also common at the outset. By contrast, periarteritis nodosa frequently starts in a less well defined manner. Fever, episodes of abdominal pain, and hypertension are common presenting manifestations. Pulmonary complaints or asthma are also common initial features of periarteritis nodosa. The most disturbing feature of the present case is the total absence of fever so common in both disease processes. In reviewing several recent reported series of



cases, I have found that fever was present in 86 to 100% of over 200 patients with disseminate lupus erythematosus, and in 85% of 300 patients with periarteritis nodosa.

The precordial pain accentuated by respiration and the dry cough are of little assistance in differentiation. Both myocardial and pericardial involvement are common in both diseases. Although the radiologists interpreted the films and fluoroscopy as indicative of generalized cardiac enlargement, the physical findings and the chest x-ray lead me to believe a massive pericardial effusion was present in our patient. (Figure 1.) In my experience, fluoroscopy is the

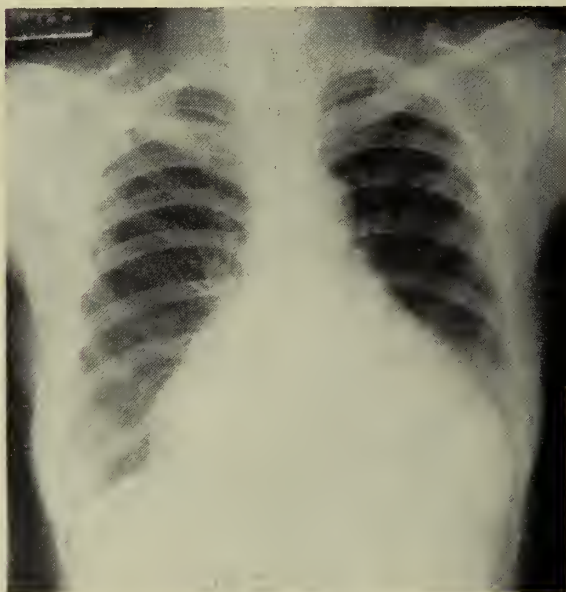


FIG. 1. Note the large "water bottle" configuration to the cardiac silhouette and the absence of congestive changes in the lung fields.

least valuable of the ways we have of differentiating between pericardial effusion and cardiac hypertrophy and dilatation. The features which suggest pericardial effusion in the present case are (a) the very clear lung fields on chest x-ray. This would be unusual with massive cardiac enlargement where congestive changes would be common; (b) the narrow pulse pressure with a high diastolic pressure. This suggests pericardial compression; (c) the normal circulation time. The circulation time is dependent on both cardiac output and chamber size. Normal circulation times are virtually never seen with marked chamber dilatation, even in the absence of failure except in certain diseases that I do not believe to be present here which are associated with high

cardiac output. The murmurs are difficult to interpret, but are commonly associated with the verrucous endocarditis of Libman and Sacks seen in approximately  $\frac{1}{3}$  of patients with disseminated lupus erythematosus. In either disease, 40 to 45% of patients manifest pericarditis sometime during their illness, but large pericardial effusions are extremely rare. In the series of 138 patients reported by Harvey and his associates,<sup>1</sup> only two showed massive pericardial effusions.

The striking hypertension is very suggestive of periarteritis nodosa. Over 60% of patients with periarteritis manifest significant hypertension.<sup>2</sup> In contrast, only 14% of Harvey's cases showed significant hypertension; and in all but 2 of his cases, hypertension was evident only after significant azotemia appeared. Adenopathy and splenomegaly are somewhat more common in systemic lupus erythematosus, but these features are not of major aid. The absence of objective joint change is common to both diseases. A symmetrical peripheral neuritis and eosinophilia, both absent in the present case, are both seen in many patients with periarteritis nodosa.

Thus, most features of the present illness suggest that this young woman had disseminated lupus erythematosus, but two features represent significant stumbling blocks. One is the striking hypertension which is unusual in disseminated lupus erythematosus. Secondly, the short course of the disease. In general, patients with disseminated lupus erythematosus have a more slowly progressive course. Approximately 10% of these individuals die each year following diagnosis of systemic lupus. In contrast, periarteritis nodosa typically progresses rapidly, and death in 4 to 5 months is common. I thus believe that the present patient may represent one of those interesting cases which manifest histologic features compatible with both of these two disease processes. I believe she will have evidence of the collagenous and ground substance changes diagnostic of lupus erythematosus in many organs. I think it probable that she will also show a necrotizing arteritis, particularly in her kidneys, which we associate with the disease we call periarteritis nodosa.

### Discussion

**DR. ROBERT D. COLLINS:** The patient died in uremia 3 months after the lymph node biopsy. As Dr. Rogers surmised, she did have DLE. In fact, most of the diverse pathologic manifestations of lupus erythematosus may be illustrated by the changes present in this case.

**Heart:** A nonbacterial endocarditis, known as Libman-Sacks endocarditis, was found on the mitral and aortic valves, and was due to repeated episodes of collagenous degeneration and repair occurring at the base of the valve. The active lesion (Fig. 2) consisted of a center of altered collagen

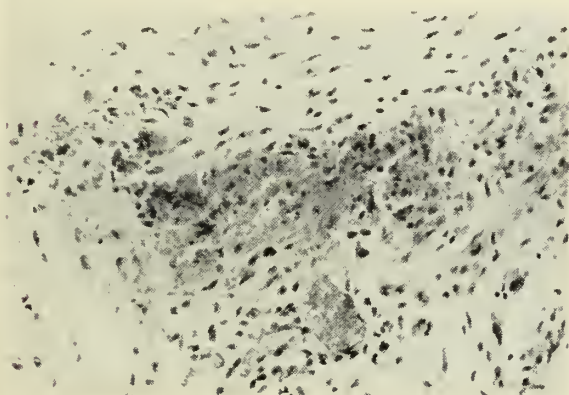


FIG. 2. Lesion at base of mitral valve associated with Libman-Sacks endocarditis. Note fibroblasts and myocytes collecting around center of degenerating collagen. Hematoxylin bodies were present but are not apparent in this illustration. (X 64.)

surrounded by a cuff of fibroblasts and Anitschkow's myocytes. Also noted were irregular basophilic clumps called hematoxylin bodies, which are diagnostic of DLE, and are often present in the valvular lesions. These bodies are seen only in tissues of mesenchymal origin, and are apparently formed by fusion of degenerating cell nuclei. Inflammatory nodules similar to that in figure 1 are rarely demonstrated in the myocardium in DLE, in distinction to this characteristic location for the Aschoff nodule of rheumatic fever. Finally, an organizing pericarditis was present, and was noteworthy in that collagenous degeneration was continuing amongst the reparative granulation tissue. Similar changes, though less marked, were noted on the pleura.

**Liver:** No alterations were present. Liver disease specific for DLE has been described, but these changes probably represent only coincident viral or nutritional liver disease.

**Spleen and Lymph Node:** The diagnosis of DLE was originally made in this case on the lymph node biopsy. There was striking hyperplasia of the lymphoid and reticular elements, with partial obliteration of the architecture. The reticular cells were quite large, occasionally multinucleated, and scattered through the follicles.\* Small areas of edema and hemorrhage were found in the medulla of the node, usually around venules which were thickened and slightly inflamed. A change peculiar to DLE was seen to involve several small arteries—peri-arterial deposition of rings of collagenous tissue to produce an "onion skin" appearance (Fig. 3). Such vascular lesions are more common in the spleen.

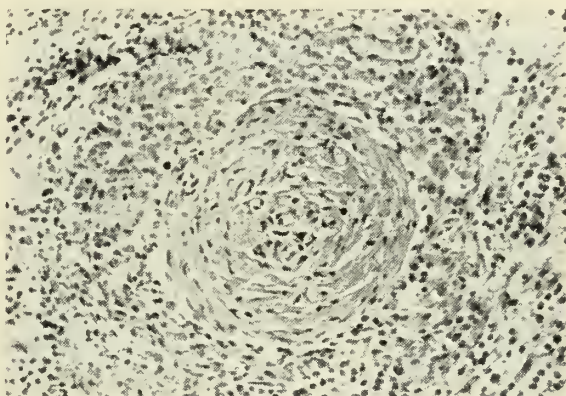


FIG. 3. Arteriole from lymph node showing ring-ing by collagenous tissue to produce "onion skin" appearance. (X 64.)

**Kidneys:** Lesions pathognomonic of DLE are most frequently found in the kidney. Fibrinoid degeneration of the capillaries occurring focally in the glomerular tuft is the lesion on which most pathologists rely for the diagnosis of DLE, either at autopsy or on renal biopsy. A component of this lesion is the publicized "wire-loop," which is simply fibrinoid necrosis of a capillary loop. The "wire-loop" (Fig. 4)\* is eosinophilic, refractile, and focal in nature, and is easily distinguished thereby from non-specific thickening of the basement membrane.

**Skin:** Scaling, plugging of the hair folli-

\*Erroneous diagnoses of Hodgkin's disease have occasionally been made in DLE, although destruction of architecture, fibrosis, and eosinophilia do not occur in the latter.

\*Numerous characteristic renal lesions were found in the present case. Fig. 4 is an illustration from a different patient, and is used here because of the unusually distinct "wire-loop."



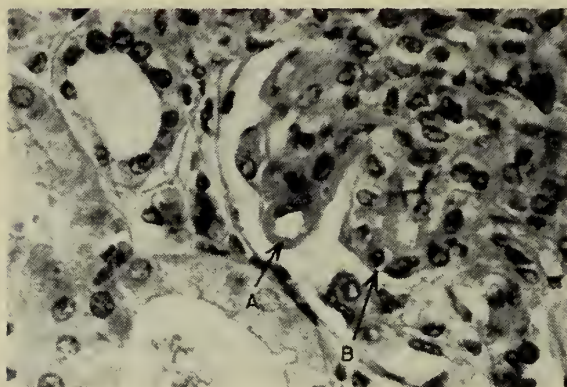


FIG. 4. Portion of a glomerular tuft with fibrinoid necrosis of a capillary resulting in a "wire-loop." (Arrow A.) In contrast to a normal capillary (Arrow B), the "wire-loop" is thickened, more eosinophilic, and refractile. (X 160.)

cles and inflammation of the upper dermis are shown in Fig. 5. Changes more diag-

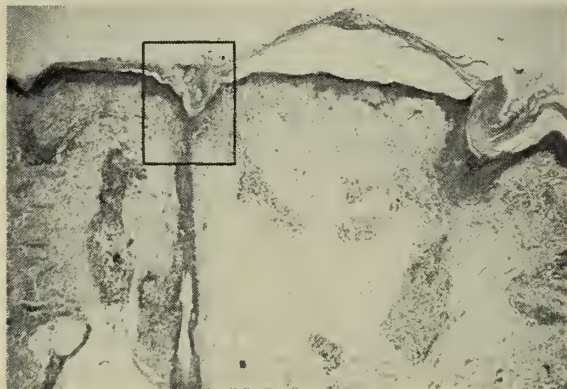


FIG. 5. Section of skin illustrating scaling, and plugging of the hair follicles. (X 10.)

nostic of lupus are degeneration of collagen and liquefaction of the basal layer of the epidermis (Fig. 6).

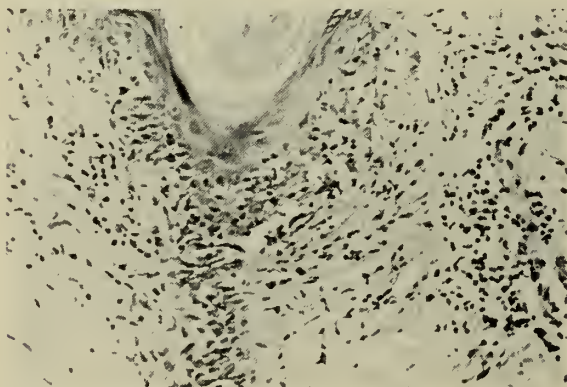


FIG. 6. Higher magnification of block in figure 4 showing collagenous degeneration and liquefaction of the basal epidermis. (X 64.)

**Vessels:** The basic alteration in DLE is degeneration and necrosis of collagen. Vascular changes are often sparse. In the present case, for example, fibrinoid necrosis was demonstrated in only one vessel—a submucosal artery in the esophagus.

**Comments on tissue diagnosis of DLE:** The most useful laboratory test for the diagnosis of DLE involves the demonstration of LE cells. The tissue changes which may confirm or establish the diagnosis are summarized below:

1. **Kidney.** Focal glomerulitis with fibrinoid degeneration of the capillaries is the most easily demonstrated pathognomonic lesion of DLE. In some cases, however, there will be no renal changes, or one may see non-specific alterations such as membranous glomerulonephritis.

2. **Skin and muscle.** The skin changes are fairly distinctive when full-blown. One should not expect to find necrotizing arteritis. Muscle biopsies are usually non-revealing in DLE, with vascular lesions much more common in other collagen diseases such as polyarteritis nodosa.

3. **Miscellaneous.** The endocarditis of Libman and Sacks is found only in DLE. Secondary infection of the valvular lesion may occur, thereby masking the underlying disease state. Hematoxylin bodies usually are not seen until late in the course of DLE, and are therefore demonstrated infrequently in biopsy material. It should be emphasized that autopsy may reveal no specific tissue changes in patients who have clearly had DLE clinically. Finally, some patients at autopsy may have classical lesions of DLE in addition to arterial lesions similar to those seen in polyarteritis nodosa. These "impure" collagen diseases are difficult to fit into a specific nosological category.

#### References

1. Harvey, A. M., et al.: Systemic lupus erythematosus: review of the literature and clinical analysis of 138 cases, *Medicine* 33:291, 1954.
2. Rose, G. A., and Spencer, H.: Polyarteritis nodosa, *Quart. J. Med.* 26:43, 1957.

# President's Page



WILLIAM J. SHERIDAN,  
M.D.

Now that the 127th annual meeting of our association has passed into history, your President desires to express appreciation to the many devoted persons who contributed to its success.

We are deeply indebted to our hosts, the members of the Memphis-Shelby County Medical Society, for their cooperation and participation in our many activities. Especially to be mentioned was a well-planned breakfast meeting where an informative program was presented to a representative group of lay civic leaders of Memphis. Participation of the local medical profession in vari-

ous community projects was emphasized and it was ably-shown how such activities as the College of Medicine and other medical facilities substantially contributes to the area economy. This type of presentation demonstrates the desire and ability of our profession to enhance the over-all facets of community life. Presentations of this character are recommended and local societies throughout the State are encouraged to consider the addition of a similar approach to their public relations programs.

The scientific program was indeed well-planned and to be commended are the many who participated by presentation of well-prepared discourses on timely subjects of general interest to the profession. Active participation by the various specialty groups is notably of increasing importance as was demonstrated by attendance at their meetings. An innovation this year was the "Fireside Conferences" presented by the Chest Physician's group. Favorable reports from those attending these conferences indicates further activity in this type of presentation.

Another group to which the medical profession of this state is deeply indebted is its House of Delegates and its various committees. Only those who participate seem to recognize the magnitude of the problems confronting our profession and these problems seem to grow and multiply year by year in about the same ratio as the staphylococcus, and similar to the latter there seems to be no specific means of their eradication. As a feature of education it is recommended that members of the association each year spend some time observing the deliberations of this body.

It would be amiss not to recognize the arduous efforts expended by our efficient Headquarters Staff who arrange details of the meeting far in advance, prepare a mountain of material germane to the meeting, and arrive on the scene only to work far into the night and day on the various required activities.

As the new year begins it is realized that to succeed the admirable administration of our retiring President, William O. Vaughan, presents quite a challenge.

*William J. Sheridan, M.D.*

President



# THE JOURNAL

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MAY, 1962

## EDITORIAL

### BLOOD TRANSFUSIONS

During 1961, at least 5,000,000 pints of whole blood were transfused in the United States.<sup>1</sup> The number of blood transfusions can be expected to increase each year.

The Joint Blood Council has suggested recently that blood transfusion practices in hospitals be reviewed with the thought of elevating their quality and providing adequate supervision.<sup>2</sup> To implement this policy, each hospital has been advised to establish a committee to review all transfusions of blood and blood derivatives; to make recommendations to the medical staff concerning the proper use of blood and blood derivatives; to insure that there will be adequate procedures for identification and compatibility testing of blood in the hospital under the immediate supervision of a physician; and, finally, to review all transfusion reactions occurring within the hospital. There has been little information

available concerning the proper use of blood and blood derivatives. For this reason, an appendix to the recent Joint Blood Council Scientific Committee Report<sup>3</sup> outlining certain basic criteria for blood transfusions should be useful. This report lists six criteria for the choice of transfusion material.

1. *Whole Blood versus Blood Components or Derivatives.*—Whole blood transfusions should be used only when whole blood is needed for optimal therapeutic effect.

2. *Whole Blood.*—Whole blood transfusions should be used in certain conditions, such as acute blood loss, when it is necessary to not only restore the blood volume but also to increase the oxygen-carrying capacity of the blood.

3. *Fresh Whole Blood or Fresh Platelet-Rich Plasma.*—Severe hemorrhage associated with thrombocytopenia, hemophilia or other coagulation defects caused by deficiency of unstable factors should be treated with fresh whole blood (less than 24 hours old). Certain patients including those with Factor V deficit as well as erythroblastotic infants needing exchange transfusions can receive blood which is not over five days old.

If bleeding occurs in the course of thrombocytopenia without significant anemia fresh platelet-rich plasma should be used. In hemophiliacs with active bleeding but no significant anemia specially prepared plasma is the material of choice.

If repeated transfusions in rapid succession are deemed advisable, some fresh blood containing the maximal amount of fresh platelets should be used to avoid excessive exhaustion of platelets in the circulation.

4. *Packed Red Blood Cells.*—Packed red blood cells will supply almost all of the oxygen-carrying capacity of the blood with about one-half the volume of whole blood. They are adequate for transfusing anemic persons who do not have hypoproteinemia, and they are especially valuable in patients with associated heart or kidney disease with impending or actual edema. The decision to use packed red blood cells or whole blood in the treatment of chronic anemia can be made only when the patient, his physical status and his disease are evaluated carefully.

5. *Plasma, Plasma Fractions, Albumin.*—Certain disorders, such as acute pancreatitis and severe burns, show a loss of plasma components rather than loss of blood cells when shock occurs. Albumin or plasma is to be preferred in the therapy of these disease states.

In hypoproteinemia where there is edema with increased body sodium, serum albumin is preferred. In hypoproteinemia unassociated with edema, albumin, plasma or stable plasma protein fraction is satisfactory.

6. *Single Transfusions.*—Although there is a place for single transfusions, if these occur in more than 50 percent of patients receiving transfusions, a critical evaluation of the blood program in the hospital is certainly needed. Transfusing convalescent patients with moderate anemia is usually unnecessary.

It would seem reasonable for each hospital to establish a program as outlined by the Joint Blood Council and for each physician to acquaint himself with the criteria for the use of blood and various blood components now available to the physician.

A. B. S.

#### References

1. Wilson, F. E.: Questions and Answers, J.A.M.A. 180:265, 1962.
2. Joint Blood Council Transfusion Review Program, J.A.M.A. 180:230, 1962.
3. Basic Criteria for Blood Transfusion, J.A.M.A. 180:230, 1962.



#### SOCIALISM

Socialism by definition consists of "*any of various theories or social or political movements advocating or aiming at collective or governmental ownership and administration on the means of production and control of the distribution of goods,*" (Merriam-Webster's Dictionary). Though the definition speaks only of "goods," services fall into the same category if there is control of their distribution or sale.

By definition then, the King-Anderson Bill (H.R. 4222), which is "to provide for payment for hospital services, skilled nursing home services, and home health services furnished to aged beneficiaries under the old-age, survivors, and disability insurance program, and for other purposes," does not represent a socialistic move. In Section

1601 of the Bill there is a statement of "prohibition against interference" with the hospitals with which there will be contractual arrangements for hospitalization of beneficiaries of the Act. But under the definition of "hospital" in Section 1606, after outlining the criteria for acceptability of an institution as a "hospital," appears the proviso, "... (7) meets such other conditions of participation under this section as the Secretary may find necessary in the interest of the health and safety of individuals who are furnished services by or in such institution;..." Does this mean that the Secretary of HEW can set up certain criteria over and above the community's criteria which are cited as acceptable earlier in the Section? If so, does this represent "control of the distribution of services" and constitute socialism? If after a contract with a hospital has been in effect and renegotiation is due, and if the Secretary of HEW suggests a modification of fees and the hospital capitulates,—is this a "control of the distribution of services?"

Actually and legally the hospital may refuse a contract. But, realistically, can it refuse a contract if, say, it is the only hospital in the community—would the people permit it? If such a hospital were built with Hill-Burton funds, could or would means be found to coerce the hospital to accept a contract, and if so would this represent a "control of the distribution of services?"

If such hypothetical situations came to pass they would represent socialism, if not literally, certainly in fact.

It is the intent, philosophy or trend toward socialism in our society which disturbs thinking citizens, and professional and business men alike. The proponents of the King-Anderson Bill shout it is not socialistic and by definition they are correct. Reuther,<sup>1</sup> of CIO and UAW, in citing the profession's fight against H.R. 4222 and its fear of the development of socialized medicine, laughs this off with a remarkable statement, which he unquestionably made with tongue-in-cheek. He said the spokesman for the doctors "in effect, are saying

<sup>1</sup>Reuther, Walter: Kennedy's Health Plan: Why Labor Wants It, Medical Economics 39:183, 1962.



that if you provide the minimum program, Congress will throw away discretion and inevitably go down the road to total socialization of American society. This is sheer nonsense. I have faith in the judgement and competence of our elected representatives." To Reuther, his statement can and should be answered in his own words, "This is sheer nonsense."

Anyone in his right mind knows the irresistible pressures of blocs of voters, and no one knows them better than Reuther—he controls one such large bloc. Has one ever laughed-off the power of War veterans? Does anyone discount Forand's newly organized bloc the National Council of Senior Citizens for Medical Care through Social Security!

When Mr. Ivan Nestigen, undersecretary of HEW recently held a "workshop" session in Nashville, a mimeographed handout of "Questions and Answers" contained the following, "Question: Isn't the program just an *entering wedge to a broad government health program*? Answer: Nonsense! Any extension of this program would have to be legislated by Congress. Are we to assume that once they have voted the Social Security health insurance program into law, Congressmen and Senators will suddenly go hog-wild, lose all critical judgement, and begin to enact health legislation the American people neither need or want?" (One wonders if the "need or want" cannot be drummed up on demand!)

Following Reuther's words<sup>1</sup> quoted above, follow other words by him as he appeared before the House Ways and Means Committee in support of the King bill. He is quoted as saying he supported the philosophy of the Forand bill, and now supports the King bill in spite of its deficiencies in some respects, and that future amendments will take care of these deficiencies as related to health care. He admits he wishes to see the principle established of using Social Security for the future solution of problems of its beneficiaries.

Great Britain went into its "cradle-to-the-grave" principles at one swoop. Our labor leaders and certain of our leaders in Washington and in Congress, recognizing that this would not be acceptable at the moment in our country, have embarked

upon a program of nibbling away at the principles of freedom so that "control of the distribution of goods (or services)" may be attained. They admit their ultimate goal, so far in generalities though at times in not so general terms.

Though Reuther and Nestigen *et al* express great confidence in our legislators, others question the wisdom of governments. Mr. John Jewkes,<sup>2</sup> professor of economic organization, Oxford, and a veteran investigator of the British economy, visiting professor at Princeton last fall, makes some clear-cut statements on this topic. He believes . . . "that those who advocate great increases in the economic functions and powers of spending of governments are the victims of a simple error in logic. They assume that governments are likely to act more wisely than the private individuals whose responsibilities are being usurped."

I too have never been sanguine in my opinion of an all-abiding wisdom in Congressmen, Senators, or top governmental executives. They are what they are because they are *politicians*, and they will remain in office only so long as they listen to the voters, and, unfortunately, when the "cards are down" too many of our leaders throw wisdom to the winds.

This is no time to idly debate the semantics of the term "socialism," rather it is a time to look beyond this and think of what kowtowing to the wishes of pressure groups will do to the economy and, of even greater importance, what will happen to the moral fabric of our people.

R. H. K.

<sup>2</sup>Jewkes, John and Sylvia: A Simple Error in Logic, Fortune, October 1961.

## DEATHS

**Dr. Joseph S. Bachman**, 96, Bristol, died March 11th at his home.

**Dr. J. Victor Henderson**, 78, Knoxville, died March 12th at University Hospital.

**Dr. Everett A. Boswell**, 76, Troy, died April 9th at his home in Florida.

**Dr. Hiram A. Laws, Jr.**, Chattanooga, died March 30th at Erlanger Hospital following a lengthy illness. He was a past-president of the Tennessee State Medical Association.

**Dr. R. Wallace Billington**, 81, Franklin, died April 5th in the Williamson County Hospital following a long illness.

**Dr. Charles R. Henry**, 76, Chattanooga, died March 14th at a Chattanooga Hospital.

**Dr. W. Webster Riggs**, 66, Memphis, died March 28th at St. Joseph's Hospital.

## PROGRAMS AND NEWS OF MEDICAL SOCIETIES

### Memphis-Shelby County Medical Society

The Society conducted its monthly meeting in the Institute of Pathology on February 6, 1962.

Dr. Pervis Milnor, Chairman of the Memphis Heart Association Program Committee, introduced the guest speaker, Dr. Bruce Logue of Atlanta. Dr. Logue is professor of medicine of Emory University Medical School and cardiologist at Emory University Hospital. His talk was entitled "Subtle Signs and Symptoms of Left Heart Failure." A question and answer period followed.

Dr. Roy Tyrer spoke on Junior Achievement after which he presented Mr. Robert Colston, who discussed the activities of Junior Achievement.

On March 6th, the Society met at the Institute of Pathology where Mr. Walter Petravage, manager of public affairs for the U.S. Chamber of Commerce, Washington, talked on the subject "Freedom vs. Communism: The Economics of Survival."

### Knoxville Academy of Medicine

The Academy held its monthly meeting in the Academy of Medicine Building on April 17th. Dr. Perry Williamson and his Committee on Public Policy and Public Welfare presented a survey of their activities with a projection into the future. Mr. Robert Cheek, public relations representative, spoke on his work in Knoxville and the surrounding areas.

### Chattanooga-Hamilton County Medical Society

The Society held its regular monthly meeting on April 3rd in the Interstate Building. The scientific program consisted of the following: "Appraisal of Colon Resection" by Dr. Charles J. Ray; "Kimmelstiel-Wilson Disease: Experience at Erlan-

ger Hospital" by Drs. Stewart H. Auerbach and Joseph H. Choi. A case report was presented by Dr. Rudolph M. Landry.

### Greene County Medical Society

At the monthly meeting of the Society conducted on April 3rd at the Elks Lodge, Greeneville, four Knoxville physicians discussed medical problems concerned with their specialties. Dr. Richard C. Sexton, Jr., Dr. Freeman L. Rawson, Jr., Dr. Frank London and Dr. Edmund C. Pierce, II, discussed various aspects of heart disease.

Col. George A. Millener, East Tennessee representative of The National Foundation, Knoxville, also attended and spoke describing the plans for the establishment of the Salk Institute for Biological Studies. The Society agreed to fully support Dr. Salk's plan and urged all citizens of Greene County to lend their support to this unusual health venture during the June campaign.

### Consolidated Medical Assembly of West Tennessee

The Society held its regular monthly meeting in the New Southern Hotel on April 3rd. The meeting was preceded by a dinner.

The guest speakers for the meeting were Drs. J. B. Miller and Bobby Higgs, pediatricians of Memphis. Dr. Miller spoke on "Emergencies in the New Born" while Dr. Higgs talked on "Staphylococcal Infections in the New Born."

### Northwest Tennessee Academy of Medicine

At the February 28th meeting of the Academy conducted at the Biltmore Hotel in Union City, the Society went on record in opposition to the King-Anderson Bill to make health care a compulsory addition to the Social Security System.

The scientific program was presented by Dr. Anthony Jerome, from the division of plastic surgery, University of Tennessee College of Medicine.

The Society also took action to recognize Dr. W. S. Alexander for his work during the many years of his practice in Ridgely.



## NATIONAL NEWS

### The Month in Washington

(From the Washington Office of AMA)

Supporters of the King-Anderson bill stepped up their campaign as the House Ways and Means Committee neared a show-down vote on the legislation which would provide limited health care for the aged under social security.

The Kennedy Administration took over the leadership in the drive with the President accepting an invitation to address a rally in Madison Square Garden, New York City, on May 20 sponsored by the National Council of Senior Citizens for Health Care Through Social Security.

The Administration also was organizing citizens' committees in individual states to whip up grass roots pressure for the bill. The President was asking prominent persons, such as former Democratic Gov. and U.S. Sen. Edwin C. Johnson in Colorado, to head such committees.

After personally pledging their support to the legislation in a White House call on the President, 27 physicians formed The Physicians Committee for Health Care for the Aged Through Social Security headed by Dr. Caldwell B. Esselstyn of New York City, president of the Group Health Association of America. Most of the 27 are educators, hospital administrators or in other administrative posts. A majority are members of the A.M.A.

Pointing out that the White House was able to muster only an insignificant number of doctors for the King-Anderson bill, an A.M.A. spokesman said at least 90 per cent of the nation's 261,000 physicians are opposed to the legislation.

The intensified Administration drive made it imperative that physicians and other opponents of the Social Security approach go all-out at this time in their efforts against the King-Anderson bill.

A vote was expected in the Ways and Means Committee in May or June at the latest.

Sen. Robert S. Kerr (D., Okla.), reaffirmed his opposition to the King-Anderson

bill but said he expected it would come up on the Senate floor for a vote. He said he and Rep. Wilbur D. Mills (D., Ark.), chairman of the Ways and Means Committee, were conferring on legislation that would expand the Kerr-Mills program—which has the wholehearted support of the A.M.A.—to cover more aged persons.

Under the leadership of Rep. William E. Miller (R., N.Y.), who is also chairman of the Republican National Committee, some Republican Congressmen got behind the so-called Bow bill which would permit aged persons to reduce their federal income taxes by up to \$125 a year to cover health insurance premiums. The government also would issue to persons 65 years and older who pay no income taxes, or less than \$125, a certificate with which to purchase health insurance.

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The Public Health Service licensed Type III oral poliomyelitis vaccine but left the decision to local health officials and physicians as to whether the oral or the Salk killed vaccine, or both, would be used this year. Types I and II oral polio vaccine had been licensed last year and Type III was the last of the series needed for protection against all three types of polio.

Production and availability of the oral vaccine will be a major factor in the extent of its use this year.

The PHS conclusion on local immunization programs was recommended by a special advisory committee to the Surgeon General and was in line with a policy adopted by the A.M.A. House of Delegates at Denver, Colorado, last November.

The PHS gave five guidelines for the local programs:—

1. Organizers of community drives must be assured that adequate supplies are available before such programs are undertaken.
2. All persons in those groups selected by the community should receive vaccine regardless of past polio immunization history.
3. In general, vaccination programs using either vaccine must have careful planning and achieve a maximum of support from official and voluntary health and medical groups.
4. The plans should assure the ready availability of the vaccine in all areas of

the community and for all persons within the selected target groups. Special emphasis must be directed to those areas and population groups having the lowest levels of immunization. Community-wide programs should achieve the immunization of the maximum number of persons, but no less than 80 per cent of the preschool children in all socio-economic groups.

5. A continuing program of immunization of infants should be incorporated as an essential feature of all organized community-wide programs.

The PHS also recommended that the three types of oral vaccines be administered sequentially, each in monovalent form at intervals of about six weeks.

"Optimally," the PHS said, "large scale immunization campaigns with oral poliovirus vaccines should be conducted during the winter or spring months."

Dr. Luther L. Terry, Surgeon General of the PHS, termed the licensing of the Type III oral vaccine as "another major step toward the final conquest of paralytic poliomyelitis."

"Now, two effective weapons, the formaldehyde-inactivated vaccine and the oral vaccine, are available for general use," Dr. Terry said. "The proper application should accelerate the decline in poliomyelitis and could lead to the early elimination of the disease."

The PHS called for emphasis this year on vaccination of the unimmunized and inadequately protected with one or the other of "these effective vaccines (or a combination so long as there is at least a complete series of either) and also to the initiation of as many well-organized community-wide programs as the supply of vaccines will permit."

The PHS set four priorities in use of the polio vaccines:

1. Vaccination programs in areas threatened with epidemics. The PHS Communicable Disease Center at Atlanta, Ga., will keep on hand supplies of oral vaccine to meet this need.

2. Routine immunization of infants, starting when six weeks old and completed in 12 months.

3. Immunization of pre-school children.

4. Immunization of young adults and parents of young children.

### **Brief Summary of the Present Status of Selective Service as it Relates to Physicians**

During the calendar year 1961 three Selective Service calls for physicians were issued. This was the first time such calls have been necessary for several years. However, during the past year there was a decrease in volunteers and an increase in the numbers required by the Armed Forces as a result of the mobilization program. This increase in requirement was obtained by:

1. Discontinuing the acceptance of resignation of Regular Officers.

2. Denying release of those Reserve Officers who had voluntarily extended their active duty for an indefinite time.

3. Selective Service call up of 1,025 physicians.

4. Call to active duty of National Guard and Reserve Units with Medical Officers attached.

Because physicians, dentists and other medical specialists, generally speaking, are liable for military service until age 35, and because they may be called as a special group, they were given the following considerations:

1. Those in a Reserve status who were called as filler personnel on or after September 1, 1961 and who had completed at least 21 months previous active duty were given the opportunity to be released shortly after the activation of the unit.

2. Those Reserve Officers on active duty serving only their required two years were released at the end of their tour.

The physicians called up by Selective Service were those in the youngest age group who had completed their internship. This group, therefore, included almost exclusively first year residents and physicians just beginning private practice. Since the call was based on age it was not evenly distributed and some hospital training programs suffered a depletion of their first year residents while others were untouched.

Because of the possibility of future Selective Service calls for physicians in time of a crisis it would be well to consider the measures which are available to ameliorate



the effect on hospital staffs and civilian communities. These are:

1. *Appeal of classification of 1-A (available for military service) to the Appeal Board.*

Shortly after completion of internship, physicians are normally classified by Selective Service in Class 1-A. An appeal may be made within ten days after receipt of this classification by filing with the local board a written notice of appeal. If the physician is located in an area other than that covered by his local board he may request that his appeal be submitted to the appeal board having jurisdiction over the area where he resides.

2. *Request for determination of essentiality.*

A physician who receives a Selective Service induction notice may, if he is essential to his community or hospital and if his essentiality can be documented, request a determination of such essentiality from his local or State Selective Service Advisory Committee. Copies should be sent to the advisory committee where he is located if this is different from the committee governing the area of the Board where the physician is registered. Such a request may also be directed to the National Advisory Committee to the Selective Service System, Washington, D. C.

3. *Delay in reporting to active duty.*

Physicians who have received induction notices and have been commissioned may apply to the Armed Service in which they are commissioned for a delay in reporting to their duty station. Such request must be supported by evidence of essentiality or severe personal hardship.

For those physicians who do not wish to subject themselves to the uncertainties of the draft, the Armed Forces Physicians' Appointment and Residency Consideration Program (Berry Plan) provides for a reserve commission with entry on active duty at one of the following times:

1. Immediately upon completion of internship.

2. As late as one year following internship.

3. Upon completion of residency training in specialties required by the Armed Forces.

Application may be made for participa-

tion in this program early during the intern year. Acceptance into any of the three categories is dependent upon the projected needs of the Armed Services.

(Prepared at the request of the AMA Council on National Security.)

## MEDICAL NEWS IN TENNESSEE

### American College of Surgeons

Some 400 doctors attended a three-day sectional meeting of the American College of Surgeons at the Peabody Hotel in Memphis, March 26-28. Speakers from large medical centers and universities shared their knowledge with surgeons and surgical specialists during the three-day meeting.

The major purpose of sectional meetings is to keep the medical profession informed on progress in surgery. Among subjects discussed were: heart disease, accident injuries, effects of antibiotics, management of gastrointestinal disease, cancer treatment and chemotherapy.

Dr. Harwell Wilson, Memphis, was chairman of the advisory committee for the meeting.

Speakers included Dr. Alton Ochsner, New Orleans, discussing "Treatment of Melanoma"; Dr. Michael E. DeBakey, Houston, discussed "Heart Disease"; Dr. I. S. Ravdin, Philadelphia, "Cancer Problems"; Dr. Warren H. Cole, Chicago, "Cancer Chemotherapy." Other speakers included: Dr. John Paul North, Dr. William H. Cole and Dr. John Van Prohaska of Chicago. Dr. Merlin K. Duval, Jr., Oklahoma City, spoke on "Surgical Management of Pancreatitis." Dr. Robert M. Zollinger, President of the College, moderated a panel on "Gastrointestinal Bleeding of Unknown Cause."

### Memphis Medical Center

More than \$100 million will be spent on construction in the Memphis Medical Center in the next 20 years, according to Dr. Frank S. Groner, administrator of Baptist Hospital. He said the figure is a projection of the amount spent in recent years and the anticipated needs of the city-county area.

Dr. Groner pointed out that there are

now 10,000 persons employed in local medical institutions with a \$33 million annual payroll.

### Memphis Academy of Internal Medicine

Dr. Alton Ochsner, New Orleans, was the guest speaker at a dinner meeting of the Memphis Academy of Internal Medicine on March 23rd, at the Chickasaw Country Club. Dr. Ochsner discussed "Unprecedented Increase in Cancer of the Lung Due to Cigarette Smoking." More than 100 physicians attended.

### Vanderbilt University School of Medicine

Dr. Harris B. Shumacker, Jr., professor of surgery and chairman of the department at Indiana University, delivered the annual Barney Brooks Memorial Lecture on March 16th. "The Experimental Approach to Renal Hypertension," a discussion of new techniques aimed at controlling high blood pressure, was the subject of the lecture.

★

The USPHS has granted Dr. Grant Liddle a Career Research Award, which is given to those with outstanding research careers. Dr. Liddle's investigations are in the field of endocrinology.

★

Dr. Peter A. Krenkel, assistant professor of sanitary engineering at Vanderbilt University, has been awarded a \$69,000 grant from the National Institute of Health to finance a three-year study of stream pollution.

★

Dr. James D. Snell, chief medical resident at Vanderbilt Hospital, has been awarded a joint Davidson County-New York Tuberculosis Association grant to study chest diseases at New York Hospital. A \$3,000 allocation has been made to finance in part, Dr. Snell's study.

### Meharry Medical College

Dr. Howard C. Taylor, Jr., chairman of the department of obstetrics and gynecology at Columbia University College of Physicians and Surgeons, lectured at Meharry Medical College on March 21st. His subject was "Studies on the Malignancy of Ovarian Carcinoma."

### University of Tennessee College of Medicine

The University of Tennessee medical units conferred degrees on 105 graduates at commencement exercises on March 18th. Dr. Andrew Holt, President of the University, conferred the degrees. Graduates included 43 doctors of medicine and 22 doctors of dental surgery.

★

A "Career Award" providing lifetime research support has been granted to Dr. Amos I. Chernoff of the University of Tennessee Memorial Research Center. The award, made by the National Institutes of Health, provides an initial five-year grant of \$122,488. The awards are made to scientists with distinguished records in research.

★

Dr. James W. Fisher, assistant professor of pharmacology at the University, has been awarded a \$105,000 five-year research grant by the Institute of Arthritis and Metabolic Diseases of the U.S. Public Health Service. The studies are concerned with the influence of drugs on the production of erythropoietin, a hormone which controls red blood cell formation.

★

The Avalon Foundation of New York has awarded the College of Medicine \$16,000 to be used this year for scholarships for students having completed their pre-medical work and ready to enter medical school. The scholarships will provide \$750 grants for 15 students based both on scholarship and financial need. The awards will be for one year.

★

Dr. Lester Dragstedt, emeritus professor of surgery at the University of Chicago and research professor of surgery at the University of Florida, recently gave two lectures at the University. He discussed in the first lecture, "The Relationship of Basic Sciences to Clinical Practice, Particularly Surgery." At the second lecture, his topic was "Peptic Ulcer and Abnormality in Physiology of Gastric Secretion."

### Tennessee Society of Pathologists

The following officers were elected at the Annual Meeting on April 9, in Memphis.



The new officers will assume their duties on July 1. President, Bill M. Nelson, M.D., Oak Ridge; President-Elect, Thomas C. Delvaux, M.D., Nashville; Secretary-Treasurer, and ASCP Councillor, Jerry Francisco, M.D., Memphis; Asst. Secretary-Treasurer, and Alternate ASCP Councillor, William Harrison, M.D., Kingsport; Assemblyman, CAP, Chester K. Jones, M.D., Jackson.

### Central State Hospital

On April 4, the first in a series of Out-Patient Clinics was held in Murfreesboro by Dr. Henry Cohen in conjunction with the Rutherford County Public Health Department.

Appointments were scheduled in advance with out-patients in the areas and the attendance was very satisfactory.

A very helpful phase of this program is being carried out by the public health nurses who make follow-up visits in the out-patients' homes. The public health nurses check to see if the patients are taking prescribed medication as indicated, note their condition and adjustment at home, and attempt to assist the patient and family in other areas, if possible. These services are offered only to the patients and families who desire to co-operate with the program and are interested in participating on a voluntary basis.

Also, through the services offered by the Public Health Department, members of the community who appear to be in need of psychiatric treatment or hospitalization may be referred to the Out-Patient Clinic for examination.

## PERSONAL NEWS

**Dr. Bernard M. Zussman**, Memphis, has been elected to Fellowship in The American Academy of Allergy.

**Dr. Glenn Horton**, Memphis, presented a paper entitled "Physiologic Disturbances of Ventilation in Bronchial Asthma" at the meeting of the American College of Allergists in Minneapolis. The program was a part of the American College of Allergy Committee on Bronchopulmonary Physiologic Therapy on which Dr. Horton is a member.

**Dr. J. L. Farringer, Jr.**, Nashville, announces the removal of his office to 1914 Hayes Street.

**Dr. M. C. Bowman**, Maryville, has announced

that he has begun the general practice of medicine at the Mannings Clinic on old Knoxville Highway.

"Carbohydrate Metabolism" was the topic of **Dr. John W. Runyan, Jr.**, Memphis, speaking to the Memphis dietitians.

**Dr. G. Baker Hubbard**, Jackson, has been named president-elect of the Tennessee Chapter of the American College of Surgeons. **Dr. Van Fletcher**, Chattanooga, has assumed the presidency and **Dr. Chas. C. Trabue, IV** of Nashville was elected Vice-President. **Dr. W. David Dunavant**, Memphis, was re-elected secretary-treasurer.

**Dr. Crawford Adams**, **Dr. George Mann**, and **Dr. Samuel S. Riven**, all of Nashville, have been appointed to national committees of the American Heart Association.

Four Athens physicians were recently honored by the community, through the Chamber of Commerce, with a testimonial dinner. The physicians honored were: **Drs. W. R. Arrants**, **C. O. Foree**, **W. E. Foree**, and **R. W. Epperson**. All had been in practice in Athens for from 30 to 40 years.

**Dr. William A. Garrott**, Cleveland, recently addressed the Kiwanis Club at a ladies night program. He spoke on the subject, "Medical Care for the Aged."

**Dr. Cecil Rowe** announces the opening of his office for the practice of medicine in Jefferson City in association with **Dr. John Ellis**.

**Dr. Robert W. Noyes**, Nashville, has received the Rubin Award of the American Society for the Study of Sterility.

**Dr. Blair Erb**, Jackson, showed a film entitled "Heart Disease" at the meeting of the Jackson Kiwanis Club.

**Dr. J. Paul Baird**, Dyersburg, recently addressed the Woman's Auxiliary to the Northwest Tennessee Academy of Medicine, the meeting conducted at the Dyersburg Country Club.

**Dr. Julian C. Lentz**, Maryville, addressed the Maryville Kiwanis Club, where he gave a review of the recent sanitary survey.

**Dr. Harris Smith**, Memphis, recently spoke on "Muscular Dystrophy" at the meeting of the Memphis Hospital Auxiliary.

**Dr. John D. Young**, Memphis, has been elected a delegate to the American Society of Internal Medicine.

**Dr. William J. Darby**, Nashville, has been named the recipient of the 1962 Osborne and Mendel Award of the American Institute of Nutrition.

**Dr. J. E. Johnson**, Chattanooga, attended the meeting of the American Board of Allergy in Minneapolis.

**Dr. R. L. Sanders**, Nashville, recently addressed the student body of Belmont College in Nashville.

**Dr. Bobby Joel Smith** has begun the practice of medicine at Boyce Clinic in Hohenwald. He later will be associated with **Dr. Edgar D. Akin** and **Dr. Don E. Gaines**.

**Dr. William E. Greer**, Nashville, has joined the VA Hospital staff where he will be in charge of

the ear, nose and throat section, surgical service.

**Dr. W. C. Crowder**, Maryville, spoke on the subject "Coronary Heart Disease" at the Maryville Kiwanis Club.

**Dr. L. M. Graves**, Memphis, has been appointed state chairman of the committee on public education and information for the American Cancer Society.

"The Physician and God" was the topic of **Dr. Duane M. Carr**, Memphis, in his talk to the Men's Club of St. John's Episcopal Church in Memphis.

"Safety Belts" was the topic of a talk by **Dr. W. David Dunavant**, Memphis, at a meeting of the Memphis Kiwanis Club.

**Dr. W. G. Rhea** and **Dr. Joe Mobley**, Paris, attended the meeting of the Southeastern Surgical Congress in Louisville.

**Dr. Sam Sanders**, Memphis, recently addressed the Georgia Society of Ophthalmology and Otolaryngology in Savannah.

**Dr. Fred B. Looper** announces the opening of his office for the practice of medicine in Selmer.

**Dr. James Bell** has announced the opening of his office for the practice of medicine in Sevierville.

**Dr. B. B. Bagby, Jr.**, Oteen, North Carolina, has been assigned to the Nashville Veterans Hospital for a year's training as a chief of staff in the VA hospital system.

**Dr. John D. Winebrenner**, Knoxville, **Dr. Edwin W. Gilley**, Chattanooga, **Dr. Augustus E. Anderson**, Nashville, and **Dr. Edgar F. Luton**, Memphis, were inducted into American College of Physicians as Fellows at its meeting in Philadelphia on April 11th. **Dr. Herman J. Kaplan**, Nashville, and **Dr. J. R. Thomas**, Memphis, were elected as Associates. The meeting was attended by 44 College members from Tennessee.

**Dr. Ralph Braund**, Memphis, recently spoke at a meeting in the Ripley High School auditorium.

**Dr. Garland McKinney** has announced the opening of his office for the practice of medicine in Selmer.

**Dr. Haskell McCollum**, Greeneville, recently addressed the members of Area 25 of the Tennessee Licensed Practical Nurses Association. His subject was "Cause, Care and Treatment of Peptic Ulcer."

**Dr. John C. Thornton**, Brownsville, has been elected president of the Rotary Club.

**Dr. Warren A. Alexander** and **Dr. Travis L. Bolton** have announced the opening of their offices for the practice of medicine at Covington.

**Dr. F. Tom Mitchell**, Memphis, recently addressed the meeting of the Junior Medical Auxiliary at the University Center.

**Dr. Victor H. Klein, Jr.**, Knoxville, addressed the Cocke County unit of the American Cancer Society, the meeting held at Newport.

**Dr. O. E. Ballou**, Knoxville, was recently honored at the Holston Optimist Club Founders Observance Dinner.

## ANNOUNCEMENTS

### American Medical Association, 111th Annual Meeting

Physicians attending the 111th Annual meeting of the American Medical Association in Chicago, June 24-28, will view over 700 exhibits and hear scientific papers in the air-conditioned comfort of America's newest and most modern exposition center—McCormick Place.

McCormick Place is located on Lake Michigan at 23rd Street, a short distance south of the loop. It is fully equipped to handle thirty thousand people an hour as they visit exhibits.

Hotel rooms will be available for everyone. There are 45,700 hotel rooms for guests in the central Chicago area, plus more than 100 hotels in and around the city.

The 1962 meeting will be the first in recent years in which it will be possible to house the entire meeting, scientific sessions, scientific and industrial exhibits, and section meetings, under one roof.

### Postgraduate Day in Radiology at Vanderbilt University School of Medicine

The Department of Radiology is offering a one-day course on Thursday, June 14, to be held at Vanderbilt University Hospital, beginning at 8:30 a.m., on the topic "Practical Approaches to Your X-ray Problems." Subjects to be covered will include radiation safety, film processing problems, problems of specific interest to the orthopedist, problems in neurosurgical conditions. Special consideration will be given x-ray problems dealing with the chest and gastrointestinal tract as well as pediatrics.

The course is acceptable for 6 hours of Category I credit by the American Academy of General Practice. Tuition is \$15.00, which includes the luncheon. For further information address the Department of Postgraduate Instruction, Vanderbilt University School of Medicine, Nashville.

### Southern Medical Association

The Southern Medical Association will hold its Annual Meeting, November 12-15, 1962, at the Fontainebleau Hotel, Miami Beach. Exhibits of high caliber are solicited for the Scientific Section.

Applications may be obtained from the Chairman of the Scientific Exhibit Committee, George F. Schmitt, M.D., 30 S.E. 8th Street, Miami, Florida.

### Physicians Recently Licensed in Tennessee

Thomas C. Littlejohn, Jr., Nashville  
Warren L. Herron, Jr., Memphis  
Julian L. Rutschman, Memphis  
Lawrence R. Jackson, Dickson  
William D. Calhoun, Clarksville  
John D. Griffith, Clarksville



Melvin Gross, Chattanooga  
John T. Vookles, Memphis  
James V. Redd, Jr., Memphis  
Larry B. Morrison, Knoxville  
Velta F. B. Cannon, Dillsboro, N. C.  
Charles V. Mooers, Knoxville

### **Blood Bank Standards Revised**

The basic document for voluntary accreditation of blood banks has been revised and is available for distribution, the Joint Blood Council announced today. "Standards for a Blood Transfusion Service," third edition, 1962, provides improved guidelines for evaluating and conducting an acceptable blood transfusion service in hospitals and community blood banks.

Dr. Gunnar Gundersen, President of the Council and a past president of the American Medical Association said: "The use of the previous editions of these Standards has been gratifying and undoubtedly has played an important part in elevating and maintaining high quality blood services for our patients. The new Standards show the results of constant study in this area for the past two years."

Copies may be obtained directly from the Joint Blood Council, 1500 Massachusetts Avenue, N.W., Washington 5, D.C., at \$1.00 each, payable with

the order. A discount of 25 percent may be given on orders of 12 or more.

### **Rocky Mountain Cancer Conference**

The 16th Annual Rocky Mountain Cancer Conference will be held at Denver's completely air-conditioned Brown Palace West Hotel, July 13-14, and will feature panel discussions on "Neoplasms Complicating Pregnancy" and "Carcinoma of the Colon." The President of the American Cancer Society and the President-elect of the American Medical Association will participate in the two-day program.

Further information may be obtained by writing Rocky Mountain Cancer Conference, 1809 East 18th Avenue, Denver 18, Colo.

### **American Medical Women's Association**

The Association extends an invitation to all women physicians attending the AMA Annual Meeting in Chicago, to be their guests at a brunch on Sunday, June 24, 1962, at 11:00 a.m. at the Essex Inn. "Medical Woman Power—Can It Be Used More Efficiently" will be discussed by a panel with audience participation.

If you will be able to attend, please notify (before June 22) the American Medical Women's Association, 1790 Broadway, New York 19, N.Y.

## PLACEMENT SERVICE

*The Placement Service of the Tennessee State Medical Association is designed to assist doctors and communities to get together. Further information and contacts to both physicians and communities are available from the Public Service Office, 112 Louise Avenue, Nashville 4, Tennessee.*

### Locations Wanted

A 32 year old Internist would like group practice or teaching position in Tennessee community of 20,000 and over in east or middle Tennessee area. Two years residency; married; Protestant; graduate Harvard Medical College. Available immediately. LW-409

A 50 year old married Board certified surgeon would like to establish general, thoracic, endoscopy surgery practice with associate, clinical or private. Protestant. Graduate Syracuse University School of Medicine. Will consider any section of Tennessee, any size community. Available upon notice. LW-418

A 32 year old married Internist (specializing in cardiology) would like either clinical or associate practice in Tennessee community containing or near medical school. Residency training. Methodist. Graduate Bowman Gray of Wake Forest Medical School. Available July 1962. LW-421

A 29 year old general practitioner, now in military service, would like to associate in clinical practice in small west Tennessee community upon completion of service. One year residency in internal medicine. Married; Methodist; graduate University of Maryland. Available September 1962. LW-423

A 32 year old Internist, Board qualified, would like clinical or associate practice in east or middle Tennessee community of any size. Married; Protestant; graduate University of Pittsburgh. Available July 1962. LW-427

A 30 year old Internist, with two years residency, would like to establish clinical or associate practice in Tennessee community of 30,000 plus. Married; Protestant; graduate Medical College of Virginia. Available July 1962. LW-430

A 33 year old Otolaryngologist, with two years residency, would like clinical, assistant or associate practice in any community of considerable size. If conditions favorable, would consider solo practice. Married; Jewish; graduate Jefferson Medical College of Philadelphia. Available September 1962. LW-433

A 31 year old Board Certified Anesthesiologist would like group practice in middle or west Tennessee community of considerable size. Residency training; married; Protestant; graduate Indiana University. Available April 1962. LW-434

A 32 year old Board eligible Ob-Gyn with four years residency would like clinical or institutional practice in any community in Tennessee. Married; Presbyterian; graduate University of Tennessee. Available July 1962. LW-435

A 29 year old general practitioner would like to establish clinical or group practice in any community in Tennessee of 10,000 plus. Married; Protestant; graduate University of Louisville. Available August 1962. LW-436

### Physicians Wanted

Physician in middle Tennessee town of 200,000 desires associate or independent internist or general practitioner. Office space and equipment provided. PW-146

Completely furnished office, including x-ray equipment, in suburban area of large middle Tennessee city, available to immediate occupancy to one or two general practitioners wishing to establish private practice. Excellent location, reasonable. PW-168

Physician in east Tennessee community with trade area around 40,000 would like associate general practitioner. New, unused, fully equipped 22 room office, only a few feet from lake. Hospital in area. One year internship required. PW-166

Large, well arranged office including four examining rooms, with attached baths, in thriving city of middle Tennessee, available to one or two physicians. Other physicians in community offer cooperation. Good housing and schools. PW-170

Surgeon wanted to assume practice of surgeon leaving July 1962, in middle Tennessee city of over 200,000. Furnished office available in clinic with Ob-Gyn and dentist. PW-171

Furnished office available in clinic located in suburb of middle Tennessee city of over 200,000 for Internist to assume practice of physician leaving July 1962. PW-172

Hospital in upper east Tennessee county with population of over 30,000, would like general surgeon to establish own surgical practice in area. One year internship; three years residency; Board qualified or Board preferred. Good industrial area with excellent schools and churches. Near TVA lakes. PW-173

FOR SALE: Lucrative medical practice and new, modern, centrally heated and air-conditioned and fully equipped office building in uptown location of middle Tennessee town of 10,000, trade area 30,000. Financing can be arranged. Owner desires to retire from private practice. PW-174

Small northern Tennessee town in great need of physician. Approved for Sears-Roebuck Foundation assistance. No other physician in community. Medical economic survey report available upon request. PW-177

General practice available Jan. 1, 1963, in upper west Tennessee community of over 800; hospital facilities nearby; no other doctor in area; clinic owned by town—leased; completely equipped; well established practice; housing available; any financial arrangements easily worked out. PW-179



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# Journal of the Tennessee State Medical Association

OWNED AND PUBLISHED BY THE ASSOCIATION

Volume 55

JUNE, 1962

No. 6

## Abstract of the Proceedings of the House of Delegates of the Tennessee State Medical Association Memphis—April 8-10, 1962

The House of Delegates of the Tennessee State Medical Association, meeting at the Peabody Hotel, Memphis, Tennessee, on April 8 and 10, 1962, in conjunction with the 127th Annual Meeting of the Association convened at 1:00 P.M. with Dr. Joseph W. Johnson, Jr., Speaker of the House of Delegates, presiding.

The invocation was rendered by Dr. John H. Burkhart, Knoxville, a member of the Board of Trustees.

DR. BURKHART: "Almighty God, our gracious heavenly Father, Thou who art the giver of life, the sustainer of health and conqueror of death, we give Thee thanks for the many opportunities which we have for serving Thee and for the many blessings which are ours in this fair land. We ask Thy blessing on the deliberations of this House of Delegates this afternoon because it is concerned with things with which Thou art concerned, namely, those things which are for the benefit of our fellow man, especially those who are afflicted and who are ill. Bless the homes which are represented here today; bless the families which are still at home and bless those of us who are away from them so that we may return safely to those to whom we love. Be with us in this meeting and give us Thy wisdom and Thy strength and may all that we do be to Thy glory and in Thy name, for Christ's name we pray. Amen."

Dr. Oscar McCallum, Henderson, Chairman of the Credentials Committee reported a quorum present.

The Speaker announced that the Minutes of the last regular session were reproduced in the June, 1961, issue of the JOURNAL of TSMA and requested that a motion be presented to approve the proceedings as published. It was severally moved and seconded

that the Minutes of the regular session for 1961 be approved as published in the June, 1961, issue of the JOURNAL. **THE MOTION WAS PUT TO A VOTE AND ADOPTED.**

### Committee on Credentials

Oscar McCallum, Chairman, Henderson  
J. T. Moore, Jr., Algood  
Robert H. Haralson, Maryville

### Committee on Amendments to the Constitution and By-Laws

Addison B. Scoville, Chairman, Nashville  
W. T. Satterfield, Memphis  
H. L. Monroe, Erwin

### Committee on Resolutions

John D. Hughes, Chairman, Memphis  
Edward G. Johnson, Chattanooga  
Robert N. Buchanan, Jr., Nashville

### Committee on Reports of Officers

G. Baker Hubbard, Chairman, Jackson  
R. C. Sexton, Knoxville  
George Holcomb, Nashville

### Committee on Reports of Standing Committees

A. Roy Tyrer, Jr., Chairman, Memphis  
C. B. Roberts, Sparta  
Walter D. Hankins, Johnson City

### Committee on Reports of Special Committees

M. F. Langston, Chairman, Chattanooga  
C. D. Hawkes, Memphis  
Jas. N. Thomasson, Nashville

### Committee on Outstanding Physician of Year Award

Jas. C. Gardner, Chairman, Nashville  
Harmon L. Monroe, Erwin  
J. Paul Baird, Dyersburg



### Nominating Committee

Since a revision of the By-Laws had been implemented, dealing with the manner in which the Nominating Committee is selected, the Speaker announced that the Board of Trustees had complied by appointing a Nominating Committee with representatives from each of the three grand divisions of the State, with no two members coming from the same county medical society.

The Speaker announced the Nominating Committee personnel as follows:

Ernest G. Kelly, Chairman, Memphis  
Charles Hickman, Bells  
J. Paul Baird, Dyersburg  
Jas. C. Gardner, Nashville  
Sam H. Hay, Murfreesboro  
K. M. Kressenberg, Pulaski  
A. M. Patterson, Chattanooga  
John H. Burkhart, Knoxville  
Harmon L. Monroe, Erwin

### Petitions to Charter Medical Societies

The Speaker announced that the House would receive petitions from county societies seeking charters. Dr. Dana Nance, Oak Ridge, representing the Roane County Medical Society, requested the House to charter a new society to be named the Roane-Anderson County Medical Society.

The Roane County Medical Society's charter was relinquished and a petition presented to the House by Dr. Nance to form the Roane-Anderson County Medical Society. The petition was approved by the Councilor from the Second Councilor District.

Dr. Frank Moore, Jackson, moved that the Roane-Anderson County Medical Society be chartered, and it was severally seconded, and approved by the House of Delegates—and the Roane-Anderson County Medical Society was chartered as a component medical society of the Tennessee State Medical Association. A Charter was later presented by the Speaker to Dr. Dana Nance. The House approved the delegates from the Roane County Medical Society to be seated as the official delegates from the newly chartered Roane-Anderson County Medical Society.

Dr. J. O. Hale, Councilor from the First District, advised the House that he had re-

ceived a petition from Dr. Williams for the formation of a medical society in Claiborne County. Dr. Hale reported that he favored the organization of Claiborne County with several other adjoining counties and that he would not recommend any action until the consolidation of the counties could be determined.

Therefore the petition from the Claiborne County Medical Society was not acted upon by the House.

### Amendments to the Constitution and By-Laws Laying on Table

Laying on the table from the last regular session was an Amendment to the Constitution to amend Article VIII, Section 3, the Amendment having to do with the revision of the Councilor Districts. Dr. Frank Moore moved that the Amendment be adopted. It was severally seconded **AND THE AMENDMENT WAS UNANIMOUSLY ADOPTED.**

### Introduction of Amendments

Speaker Johnson called for the introduction of any proposed amendments to the Constitution and By-Laws. Three amendments were introduced to the Constitution and three amendments to the By-Laws:

### COMPLETE CONTENTS OF ALL AMENDMENTS ARE FOUND ON PAGES 231-234 OF THIS ISSUE OF THE JOURNAL.

#### CA No. 1

By: Dr. John H. Burkhart had to do with the naming of the Association.

#### CA No. 2

By: Dr. John H. Burkhart would amend Article VIII, Section 1 dealing with the "Secretary-Editor" of the Association. This Amendment would also change Section 2, Section 4, Section 5 and Section 7 of Article VIII of the Constitution.

#### CA No. 3

By: Dr. John H. Burkhart had to do with the powers and duties of the Board of Trustees. This Amendment would involve Sections 1, 3 and 6 of Article IX.

#### BA No. 1

By: Harmon L. Monroe dealt with the composition of the Nominating Committee and would amend Chapter V, Section 2 of the By-Laws.

**BA No. 2**

By: Dr. Carroll H. Long concerned the composition of the Nominating Committee, Chapter V, Section 2 of the By-Laws.

**BA No. 3**

By: Dr. Carroll H. Long also dealt with the Nominating Committee personnel, Chapter V, Section 2.

These Amendments were referred to the Reference Committee on Amendments to the Constitution and By-Laws.

**Introduction of Resolutions****COMPLETE RESOLUTIONS AS ADOPTED BY THE HOUSE APPEAR ON PAGES 234-244.**

The Speaker stated that the next business before the House was the introduction of resolutions. Delegates were instructed not to discuss or debate the resolutions at the time of introduction, but read them only in order for the Speaker to place the resolutions before the Reference Committee. The Speaker pointed out that those persons interested in resolutions introduced should appear before the Reference Committee on Resolutions to express their views. It was stated that opportunity would be given for debate and discussion when the resolutions were reported to the House by the Reference Committee on Resolutions on Tuesday, April 10th. The Executive Director announced the rooms where the Reference Committees would meet and the Speaker urged that anyone wishing to testify before the Reference Committee on Resolutions to note the room and time of meeting in order that they could make an appearance. The following resolutions were introduced:

**RESOLUTION NO. 1**

By: Memphis-Shelby County Delegation  
Subject: Clarification of the Role and Responsibilities of Physicians and Medical Societies in Civil Defense and Disaster Planning.

**RESOLUTION NO. 2**

By: C. D. Hawkes, M.D., for Committee on Hospitals  
Subject: Visiting Nurse and Medical Home Care

**RESOLUTION NO. 3**

By: R. M. Finks, M.D., for Board of Trustees  
Subject: (AMPAC) American Medical Political Action Committee

**RESOLUTION NO. 4**

By: C. D. Hawkes, M.D., for Liaison Committee to Public Health Department  
Subject: Immunization of Children

**RESOLUTION NO. 5**

By: C. D. Hawkes, M.D., for Liaison Committee to Public Health Department  
Subject: Testing for Phenylketonuria in Infants

**RESOLUTION NO. 6**

By: John H. Burkhart, M.D., for Youth and Education Committee  
Subject: Establishment of Student Loan Fund

**RESOLUTION NO. 7**

By: Roland H. Myers, M.D., for Sight Conservation Committee  
Subject: Adoption of a Standard Method for the Evaluation of Percentage of Visual Loss and Disability

**RESOLUTION NO. 8**

By: W. O. Vaughan, M.D.  
Subject: Withdrawal of Persons Addicted to Narcotics in U.S.

**RESOLUTION NO. 9**

By: John R. Thompson, Jr., M.D.  
Subject: Endorsement of the Commissioner of the Department of Public Health and the Commissioner of the Department of Mental Health

**RESOLUTION NO. 10**

By: Jas. A. Kirtley, Jr., M.D., for Committee on Prepaid Health Insurance  
Subject: National Blue Shield Senior Citizens Plan

**RESOLUTION NO. 11**

By: Jas. A. Kirtley, Jr., M.D., for Committee on Prepaid Health Insurance  
Subject: Resolution to AMA House on National Blue Shield Senior Citizens Plan

**RESOLUTION NO. 12**

By: W. O. Vaughan, M.D.  
Subject: Commendation to Dr. Thomas F. Frist for Outstanding Work as Consultant to the American Medical Association's Committee on Aging

**RESOLUTION NO. 13**

By: Douglas H. Riddell, M.D., for Legislative and Public Policy Committee  
Subject: Support of Existing Programs for the Medical Care of the Aged and Continued Opposition to King-type Legislation

**RESOLUTION NO. 14**

By: Joseph W. Johnson, Jr., M.D. (making



introduction for Dr. Frank Luton and Committee on Mental Health)

Subject: Sponsorship by the Association of a Conference on Mental Health in Cooperation with the Tennessee Mental Health Association and the Mental Health Committee of the Woman's Auxiliary to TSMA

RESOLUTION NO. 15

By: Joseph W. Johnson, Jr., M.D. (making introduction for Dr. Frank Luton and Committee on Mental Health)

Subject: Support by the Association of a Request by the Tennessee Department of Mental Health to the next Legislature for an Appropriation which will Provide for the Establishment of an Eight (8) Hour Day for Attendants within Its Hospitals

RESOLUTION NO. 16

By: Addison B. Scoville, Jr., M.D.

Subject: Use of Animals in Research

RESOLUTION NO. 17

By: Alvin J. Ingram, M.D., and Memphis-Shelby County Society

Subject: Commendation and Active Support of the American Medical Association

RESOLUTION NO. 18

By: Laurence A. Grossman, M.D., for the Council of TSMA

Subject: Relationship Between Doctors of Medicine and Doctors of Osteopathy

RESOLUTION NO. 19

By: Wm. K. Owen, M.D., for Council of TSMA

Subject: Society Reports to the Council

RESOLUTION NO. 20

By: Charles C. Trabue, M.D.

Subject: Medical Assistance to the Aged Program

**The above resolutions were referred to the Reference Committee on Resolutions.**

The Speaker announced that the next order of business of the House would be to hear the Reports of Officers.

## REPORTS OF OFFICERS

### Report of the President

WM. O. VAUGHAN, M.D.

Before presenting the report of the President, Dr. Vaughan asked permission of the House to comment upon the untimely death of the immediate past-president, Dr. Ralph O. Rychener, Memphis. He stated that the influence, diligence and dedication to medi-

cine and to the Association, as rendered by Dr. Rychener, is going to be missed. He called attention to the special editorial in the TSMA JOURNAL (March issue) dedicated to Dr. Rychener.

The report of the President was a review of the effective work accomplished during the preceding year. It was pointed out that communications was one of the chief problems confronted and the membership was urged to keep informed by reading the JOURNAL, the several letters and informational bulletins that cross the desk of every physician each day. The report stated that only a well-informed membership can effectively steer the ship of medicine through the turbulent waters that we are now sailing. The President urged the county medical societies to hold indoctrination meetings and suggested that such sessions be conducted on the state level as well.

The President pointed out that he had appeared on numerous programs, moderated panels, attended national and regional meetings and cooperated with organizations that have a common interest to medicine.

The report urged every physician to continue to exert efforts to maintain high ideals of medicine and medical care in Tennessee. Medicine and the State Association's affairs are complicated and will become increasingly so in the future, but physicians must continue to dedicate themselves to the care of the sick as well as interest in public, scientific and legislative affairs.

The President reported his concern with the image of medicine in Tennessee and pointed to the fine work of many of the county medical societies, the State Association and individual physicians. He stated that "we are witnessing an effort to change the practice of medicine from the private care of patients to a centralized system. As the image of the Medicine is changing, so is that of America. Increases in government taxation, painful even to the smallest wage earner, is felt." The report stated that during a 40-hour week, the average American spends eleven hours and twenty minutes working to pay his taxes. "Galloping increases in social security, unemployment compensation and a myriad of other devices of paternalism, now face all of us."

The President reported on the implemen-

tation of the Kerr-Mills Law in Tennessee and how it was accomplished. He stated that the original program instituted in 1961 had been broadened, due to the efforts of the State Medical Association. The President explained in his report the medical assistance to the aged program now in effect in the state, for persons 65 years of age or older. He outlined the provisions, income levels and other conditions of the "near-needy" aged in order to be eligible for medical assistance to the aged benefits.

The President's report rendered in detail the steps and efforts taken to increase participation of physicians in the Tennessee Plan. It was pointed out that at present, the largest number of doctors ever to participate in the plan are now included.

The President's report covered thoroughly the perplexing problems encountered with the Regional White House Conference for ten southern states, conducted in Nashville in November of 1961. It was shown that only with the efforts of physicians and the good relationships with the Governor of the State, were we able to get physician representation on the panels where the medical viewpoint could be made known in the Regional White House Conference.

Another very important matter discussed in the report was the concern of the President with the question of ethics. The report urged physicians to face up to the ethical relationship between the doctor of medicine and the cultist. It was pointed out that an unethical physician must be ferreted out.

The report further stated that county medical societies that are inactive must become active or they should be abolished. "The corporate practice of medicine and contractual arrangements with physicians and hospitals is of tremendous concern to the Association." The report stated that the Council was aware of these problems and is constantly seeking a solution.

The report of the President stated that the major activity during the past year was involved with legislative issues. "Intensive activity in the area of planning and recommending of programs for the health care of the aged has been undertaken. This Association, along with state medical associations throughout the nation, has been urged to be alert in taking advantage of any and

every opportunity to assist in the planning and study phase within our state which would lead to the solving of this problem of medical care for the aged." The President stated his gratefulness for response of individual members and legislative key contact doctors in all areas of the state and their contributions to the working out of many of the problems with which we have been confronted.

The report stated that TSMA representatives testified before the House Ways and Means Committee in the summer of 1961, effectively presenting testimony and reasons why H.R. 4222, the King-Anderson Bill, should not be recommended by the House Ways and Means Committee, or adopted by Congress.

The President commended the Woman's Auxiliary of TSMA for their effective work.

It was urged that physicians participate in civic affairs, local, state and national politics, and be active in county medical societies, thereby showing through them strong support and unity in the State organization and to help strengthen the efforts of the American Medical Association. "The cost of medical care continues to be a difficult and important issue which affects practically all elements of the public, as well as medicine. This is one of the major problems facing medicine today."

The President's report concluded by pointing out that "the professional freedom and dedication of physicians are under attack, but what is even more important, they are under attack by calculated plan. The plan combines 'foot-in-door' tactics with long range strategy and ample propaganda. It masquerades its intention under welfare programs with attractive packaging, nice sounding labels and aggressive promotion. It uses both open and invisible sources of criticism of the medical profession. It employs 'divide and conquer' tactics to separate physicians from their organizations and destroys the cooperative relationship between the doctor and patient."

The report closed with a plea for physicians to keep themselves informed as individuals and as an organization, educate their patients and the public at large, and elect legislators who are cognizant of the threats



not only to medicine but to our whole national welfare.

#### Report of Secretary-Editor

R. H. KAMPMEIER, M.D.

"The JOURNAL of the Tennessee State Medical Association has reflected a drop in advertising which has affected the medical journals on a nationwide basis. Thus the pages devoted to advertising during 1961 were 676 as against 863 in 1960. To some extent this affects the pages devoted to text or non-advertising material with the result that in 1961, there were 460 such pages as against 542 in 1960. The ratio of advertising to pages of text has been maintained, as in the past, at about a 60:40 ratio.

I am sure the officers of the Association would join me in the hope that those sections which are more or less of an editorial nature have been read diligently by the membership over the past year. The President's Page, the editorial pages, special articles, and the yellow page inserts,—have tried to keep the members of the Association abreast of matters in the socio-economic and political fields. These are critical times! If the members will but read, they will learn what their officers, the Board of Trustees, the House of Delegates, and special committees of the Association are doing to meet the challenges of these troublesome times.

All we can hope to do is to provide this selected material for the membership and hope that it will be read and raise thoughts and action on the part of the members as dutiful citizens.

As in past years, your Editor again wishes to acknowledge and to thank Doctors Addison B. Scoville, Jr., and Albert Weinstein, Assistant Editors, for their able assistance."

#### Report of Board of Trustees

R. M. FINKS, M.D., Chairman-Treasurer

The report stated that the Board is responsible for the management and policy direction of the Association's affairs throughout the entire year, with the exception of the sessions of the House of Delegates when major policy decisions are made. It was stated that four regular meetings of the Board were conducted quarterly during the

year. Much of the lengthy report of the Board of Trustees was abstracted for the convenience of members of the House.

The Chairman outlined the business transacted by the Board of Trustees at each of its regular meetings. Matters of prime concern to the Board during the past year included legislative issues, both at the national and state levels, the Tennessee Plan, numerous administrative and public service activities, as well as the large amount of routine business of administration that the Board deals with each year. The report pointed out that the Board's activities in each of its meetings were published in the JOURNAL for the benefit of all members, immediately following the Board meeting each quarter.

A detailed review of the important actions of the Board were presented. One of these included the recommendation to the State Department of Public Welfare, that an extension for hospitalization should be made under the state plan for the Kerr-Mills Law for the Aged. A recommendation was made for a re-definition of malignancy and for lengthening the period for certain illnesses. A recommendation was made to include nursing home care. It was also recommended that the drug formulary under the MAA program be expanded, together with a wider scope of anti-bacterial agents. The Board strongly recommended that the \$100 deductible in the state plan for medical assistance to the aged was unrealistic and urged that a \$25 deductible be established.

The report recommended that all members of the House of Delegates carefully review the details and actions of the Board of Trustees as outlined in the prepared report and presented to all members of the House. Some of the more important actions of the Board included the following:

1. Inaugurated action to step up the program for obtaining additional participating physicians in the Tennessee Plan.
2. Approved the establishment of a group life insurance program for members of TSMA. Also, approved additional coverage to be offered for dependents of insured physicians under the plan, using the dividends accrued from the Group Life Program to pay for the additional insurance.
3. Approved the establishment of review

committees in the larger county medical societies of the state to consult with insurance companies when needed.

4. Approved an activity for the Legislative and Public Policy Committee to sponsor a meeting in Washington with Tennessee members of the House and Senate and key physicians from Tennessee. This meeting was for the purpose of obtaining a better understanding and to discuss problems of mutual concern.

5. Approved the regional legislative meetings to be held in the congressional districts of the state.

6. Approved for the Public Service Committee to again conduct the breakfast during the annual meeting for key community leaders.

7. Approved a postgraduate education program to be presented on disaster planning and civil defense protection in 1962. The general theme to be followed will be "Medical Aspects in Civil Defense."

8. Recommended appointments to the Governor for the State Board of Nursing.

9. Through the efforts and leadership of the Board, the Medical Assistance to the Aged Program was expanded more in keeping with the recommendations originally made by the Tennessee State Medical Association's House of Delegates.

10. Appointed the standing and special committees of the Association for 1962-63.

11. Recommended changes in the Constitution of TSMA to better effect the operation of the Association.

The report stated that TSMA has exercised leadership at the national level in medical legislative activities. At the state level, the Board supported legislative activities relating to health programs in Tennessee and opposed those actions that were detrimental to public health.

The report concluded by pointing out that many critical problems continue to face medicine, particularly in the field of economics, legislation and ethics. It was stated that the climax to the major problem in legislation will very likely occur in 1962. "H.R. 4222, the King-Anderson Bill will be won or lost perhaps during the summer of 1962." It was pointed out that it was more apparent that the Tennessee State Medical

Association must do a thorough job of planning for the future on a long-range basis.

#### Report of the Treasurer

The Treasurer's report contained the official audit conducted at the close of December, 1961; the audit being made by Grannis and Associates, CPAs of Nashville. It was shown that the Association received dues payments from 2,884 members, totaling \$105,250.00 for the year 1961. A sharp decrease in advertising revenue was revealed.

Income from the JOURNAL totaled \$34,642.82 for 1961, which was a decrease of nearly \$20,000 below 1960. The loss of income has leveled to where it is approximately at the 1957 income level.

The Treasurer's report stated that the total budget for 1961 was \$150,750.00, established for the operation of the organizational and public service departments. The budget for the operation of the postgraduate education committee was \$17,900.00. The Treasurer's report stated that the Association operated well within this budget with a comfortable cash reserve at the end of the year.

The budget established to meet the needs for the fiscal year 1962 is \$145,600.00.

The Association's funds are used to provide services to the membership, salaries, programs of committees, to maintain the headquarters office building and properties, to publish the JOURNAL and operate the general business of the Association, to conduct legislative activities, to conduct the annual meeting which increases each year in its cost and requirements, payment for expenses of AMA delegates, committee expenses and travel, official travel of officers and the staff, and other related activities, printing costs, postage, supplies, telephone and telegraph, attorney fees, auditing and many other expenditures used in the conduct of the Association's business.

The report concluded by stating that adequate financing now exists to do the job that is set before the Association for the immediate future.

A consolidated financial statement and balance sheet follows:



**Consolidated Financial Statement  
Tennessee State Medical Association  
Nashville, Tennessee**

**BALANCE SHEET  
December 31, 1961**

**ASSETS**

|  |              |              |
|--|--------------|--------------|
| Cash in Banks (For operating expenses) |              | \$ 79,334.82 |
| Investments—                           |              |              |
| Savings                                | \$ 86,638.33 |              |
| First Mortgage Notes                   | 69,140.05    |              |
| Federal Farm Loan Bonds                | 8,000.00     | 163,778.38   |
|  |              | <hr/>        |
| Land and Building (net)                |              | 69,813.56    |
| Equipment (Net)                        |              | 4,878.54     |
|  |              | <hr/>        |
|  |              | \$317,805.30 |

**LIABILITIES AND  
NET WORTH**

|               |              |
|---------------|--------------|
| Payroll Taxes | \$ 628.70    |
| Net Worth     | 317,176.60   |
|               | <hr/>        |
|               | \$317,805.30 |

**Report of the Council**

FRANK A. MOORE, M.D., Chairman

The Chairman of the Council stated that one of the principal problems of the Council is the individual physician, who is not following the Code of Ethics in one or more of several fields. The report stated that a continual problem exists with physicians who do not belong to the State Medical Association, or the county or district medical organization. Especially, ethical problems exist with this group of physicians.

It was pointed out the continuing problem involved with the relationship of physician with osteopaths. The Council had devoted two meetings to this problem in the past year and due to the changing national picture, the Council had been unable to enlist the strong support needed in this endeavor and urged that the House take action in supporting the Council in a new attempt to secure a definite well-organized approach to the problem.

Another problem the Council reported was the disregard of some county societies in sending the Councilor Report of their society to the Councilor for the district. It stated that this was a vital weakness in the business of our Association, and the Council would take action in this matter.

The report pointed out that the Council was checking into the abuses in the field of corporate practice of medicine. Statements of types of contracts are being obtained from all physicians involved.

The Chairman of the Council reported that a committee had been appointed to study osteopathic practice for certain information necessary to the Council in making recommendations to the House of Delegates. The report also recommended that the Legislative Committee of TSMA consider some method for dealing with the licensed physicians who do not belong to the local, state or national medical organization. The report of the Council concluded by the Chairman stating that he had attended a National Congress on Medical Quackery held in Washington on October 6-7. The Congress was sponsored by the AMA and the Food and Drug Administration.

**Report of the Executive Director**

J. E. BALLENTINE

Upon the recommendation of the Reference Committee on Reports of Officers, The House of Delegates approved that the Executive Director's report be inserted in the JOURNAL as presented. The report of the Executive Director is of necessity long and detailed. The complete report covering the Association's activities in the 1961-62 year is contained in this issue as an insert. Report follows page 240.

At the conclusion of the Reports of Officers, **all reports of Officers were referred to the Reference Committee on Reports of Officers.**

**REPORTS OF COMMITTEES**

The Standing and Special Committees were given necessary time to make their reports when the committee chairman felt that additional time was indicated. The following committee reports were submitted:

**Standing Committees**

**Report of the Committee on Scientific Work**

R. H. KAMPMEIER, M.D., Chairman

"The scientific program of the one hundred and twenty-seventh Annual Meeting of the Tennessee State Medical Association reflects the action of the Board of Trustees

of five years ago in providing \$100 stipends for guest speakers brought to the Annual Session by the specialty societies. The current program represents the fourth year of this policy. The Board of Trustees appoints representatives of the specialty groups to the Committee on Scientific Work on an Annual basis depending upon which groups are to receive the stipend for guest speakers.

The current Committee on Scientific work consists of the following:

Members for the specialty societies are:

Dr. Wendell W. Wilson—Academy of General Practice

Dr. Henry B. Turner—Obstetrical & Gynecological Society

Dr. W. David Dunavant—College of Surgeons

Dr. C. Harold Steffee—Pathologists

Dr. B. M. Brady, Jr.—Radiology

Dr. Bruce E. Walls—Psychiatry

Members for the profession at large are:

Dr. Fred B. Ballard, Jr.

Dr. John H. Burkhart

Dr. Robert P. McBurney

Albert Weinstein—from the Editorial Board

Addison B. Scoville—from the Editorial Board

Speaking for the Committee, it is our hope that the program for the Annual Session will prove of interest and be educational."

#### Report of the Committee on Hospitals

C. D. HAWKES, M.D., Chairman

It was stated in the report of the committee that during the 1961-62 year, the Committee on Hospitals had focused its attention on the development of better understanding between hospitals and practicing physicians. Dr. Hawkes stated that he had inherited the chairmanship of the committee when Dr. Merlin Trumbull had a heart attack.

Dr. Hawkes stated that the committee had devoted its activities principally during the year to meeting with the Executive Committee of the State Hospital Association in finding out how better liaison might be accomplished. As a result of such meetings, a resolution on home nursing and medical care was being presented. In addition, the Hospital Committee requested the Board of Trustees to appoint members to accredita-

tion teams set up by the Hospital Association to aid hospitals in achieving accreditation and thus improving their standards.

The report also requested the Board to urge the Licensing Board for hospitals to provide more staff for hospital inspection.

The report stated that the Committee had reaffirmed the position of the Tennessee Medical Association in response to various questions that the employment or use of a physician by a corporation, institution or agency which permits the sale of services of a physician for a fee is contrary to the public interest and a violation of medical ethics.

The report concluded by stating that the Hospital Committee reaffirmed the use of the Association's Press Guide in dealing with newspapers throughout the state, and urged that additional funds make the Kerr-Mills Law more effective in furthering the fight against the King-Anderson Bill.

#### Report of the Liaison Committee to the Public Health Department

C. D. HAWKES, M.D., Chairman

The report revealed that the Liaison Committee to the Public Health Department had representation at each of the two meetings of the State Public Health Council. It was stated that two resolutions, one concerning immunization of infants and children and one concerning testing for phenylketonuria were prepared for presentation to the House of Delegates.

It was stated that the Committee had received information that the implementation of the Kerr-Mills law was not being carried out strictly according to the recommendations of TSMA, and urged that work be conducted to revise the program in Tennessee in order to present the program more in line with the recommendations of the Tennessee State Medical Association.

The report stated that the Committee had studied fees by physicians for care of patients through the Crippled Children's Service Program, and concluded with the Committee thanking the Commissioner of Health and members of the Public Health Council for their cooperation and diligence in the interest of the health of the people of Tennessee.



### Report of the Legislative and Public Policy Committee

DOUGLAS H. RIDDELL, M.D., Chairman

The report stated that the Committee had given top priority for the campaign against passage of any type of legislation which would create a compulsory health care program financed through the social security mechanism.

The Chairman outlined efforts of the Committee for a positive approach to the problem, one of public information and education to the end that the public is made aware of existing health care programs in Tennessee, with special emphasis placed on the medical assistance to the aged program through the Kerr-Mills Law and implemented in Tennessee in July, 1961.

The report outlined the manner of testimony presented by physician witnesses from Tennessee before the House Ways and Means Committee on the hearings of the King-Anderson Bill (HR 4222). The testimony supported the fact that Tennessee already has in existence programs capable of caring for the needs of not only the aged, but of persons of all ages who might be medically indigent. The report stated that the Committee had undertaken various projects to convey medicine's position to the people of Tennessee. A report on the meetings in the various congressional districts of the State was presented. A review of the trip to Washington by physicians from every congressional district in the State, together with hospital and dental association representatives, was reported.

It was stated that the Committee had worked closely with the AMA in correlating and coordinating its activities. The Chairman reported on a national legislative conference in Chicago in January where materials and information were furnished by AMA, compiled by the TSMA headquarters staff, and distributed to county medical societies and individual physicians. Also information reflecting the status of the King-Anderson Bill had been published in each issue of the TSMA JOURNAL.

The report stated that the Committee had worked with allied health professions and non-medical groups at the state level to marshal public opinion in support of its

campaign against medical socialism. The report reviewed in detail the trip to Washington to meet with members of the House and Senate from Tennessee and the Committee report recommended a continuing program of this type in order to create better understanding and closer relationships with the medical profession and the men who shape legislation in Congress.

The Woman's Auxiliary to TSMA was commended for its vigorous activity in the campaign to defeat the King-Anderson Bill. The report outlined the outstanding activities of some of the county medical societies and stated that several county societies had demonstrated a growing awareness of the danger posed by the King Bill and had launched comprehensive programs to present factual information to the citizens of their communities. "Unfortunately, the degree of apathy and disinterest evidenced by some societies and a number of individual physicians is a matter of grave concern."

Members of the House were invited to visit the committee's exhibit where materials were available for mass distribution to patients.

The report closed by stating that physicians must intensify their efforts to inform the public of the facts concerning King-type legislation. Medicine must accept its role of leadership in the fight to prevent the decline of the quality of medical and health care which would result from federalized medicine in the United States.

### Report of Committee on Postgraduate Education

R. A. DAVISON, M.D., Chairman

As a preface to the report, the Chairman stated that his report was not one too happily given. He hastened to state that it was not a reflection on the lack of activities of the members of his Committee because they had been active in devoting their time, energy and thought to the program.

The report outlined the three different types of programs attempted during the year. The first program being a symposium presented in ten cities of the state on the subject, "Some Aspects of Industrial Medicine for the Practicing Physician," received small attendance at each of the sessions.

The second program presented was a CPC-type program on "Medical and Surgical Diagnostic and Therapeutic Problems," and was presented in eight centers in the state—two centers indicating that they did not wish to participate in such a program.

The third presentation was an all-day symposium presented in the four major cities of the state on the subject "Surgery for Specialists and General Practitioners." Attendance at these sessions was small.

As a result of the poor attendance at the sessions, the Committee voted to recommend to the Board of Trustees that the Committee be placed on a stand-by status and that proper notification and publicity be given to all members of the Tennessee State Medical Association that the Committee would be available upon request by local medical societies to assist them in any way possible in presenting scientific programs. The Committee requested the Board to discontinue the post-graduate education programs in the state. The report stated that the Board of Trustees accepted this recommendation.

However, the Board upon recommendation of the Disaster Planning Committee, instructed the Postgraduate Education Committee to try to formulate a program on Disaster Medicine in conjunction with the Disaster Planning Committee for presentation in 1962. The report concluded by stating that the Committee had made every effort to present interesting and educational programs but that physician-interest was not present.

The report ended with the Chairman strongly urging that the Committee continue in a stand-by status for organized postgraduate programs.

#### Report of Memoirs Committee

HENRY L. DOUGLASS, M.D., Chairman

The Memoirs Committee reported that since January 1, 1961, fifty-three members of the Association had died. The names of the deceased physicians were read by the Chairman.

The report stated that every branch of medicine suffered loss in 1961. "These men who, guided by the same ideals and, with a common purpose, played their part over the

last fifty years in building this profession to its present stature and they expended a combined total of more than 2,000 man years of service in making those years a golden age for medicine." The report pointed out that these physicians deserved full honor and credit for having played their part so well in this sublime achievement.

The report concluded by stating that in the distant future, other generations will look back upon the record and will agree that the quality of such men and their long beneficent services to sick and distraught people was an outstanding example of the best that medicine had to offer in the first half of the 20th century.

(The House stood in silent tribute to the deceased members.)

#### Report of Committee on Prepaid Health Insurance

JAS. A. KIRTLEY, JR., M.D., Chairman

The report stated that the Prepaid Health Insurance Committee met in July, 1961, to (1) discuss apparent "inequities" in the Tennessee Plan; (2) to discuss a senior citizens plan; and (3) consider recommending a Plan B to the Tennessee Plan. The Chairman stated that after considerable discussion, the Committee voted to expedite the following program:

(1) To revise the nomenclature of procedures in the current Tennessee Plan and use code numbers for each procedure similar to that set out in the California Unit Plan, 1960, and also as those used in the Tennessee Medicare Contract. (2) To add a number of procedures heretofore unlisted in the Tennessee Plan. (3) Not to change the basic fee schedule of the present Tennessee Plan. (4) That the TSMA Prepaid Health Insurance Committee should make every effort to induce physicians to sign new participating agreements adopted by the House of Delegates in 1961.

The report stated that there are at present 1,850 participating physicians from Tennessee in the plan and 65 in bordering states, making a total of 1,915 participating physicians—an all-time high.

The committee voted not to consider a Plan B at this time.

Two meetings of the Committee in 1962



to discuss the National Blue Shield Senior Citizens Plan were reported and it was stated that the Committee found inequities in the plan, especially in the in-hospital medical provisions, due to the omission for history, physicals and consultations.

It was the final consensus of opinion of the Committee that the approval of the National Blue Shield Senior Citizens Plan should be recommended to the House of Delegates, with the exception that certain reports are to be made early in 1963.

The report also urged that the delegates from Tennessee to the AMA House of Delegates introduce a resolution for the AMA to use its influence with National Blue Shield to correct the inequities of medical care and further to seek action that would give the state medical associations some prerogative toward negotiating the fee schedule and conditions in the plan as it pertains to the respective states.

#### Medicare

The Executive Sub-Committee of the Pre-paid Health Insurance Committee met on several occasions to consider changes in Medicare proposed by the Department of Defense. The new contract for the dependents of military personnel was negotiated, effective December 1, 1961. There are no significant changes in the present contract from last year. The present contract expires November 30, 1962.

#### Report of the Advisory Committee to the State Department of Public Welfare

AUBREY B. HARWELL, M.D., Chairman

The report stated that on July 1, 1961, the program of Medical Assistance to the Aged under the provisions of the Kerr-Mills Law was inaugurated and a total sum of approximately \$2 million was made available for the first year's operation of this service.

The Governor appointed a committee known as the Governor's Committee to determine how these funds were to be spent and to establish standards governing the eligibility for such services. It was reported that based on the best available estimates comparing these estimates with the experience already obtained with hospitalization programs for recipients of Old Age

Assistance, a cautious entry into this field was necessary. The report contained statistics of the estimates for medical assistance to the aged, and included several tables dealing with the case load, number hospitalized, cost of hospitalization, estimated budget, actual experience to date, and the percentages of the program as used.

The report pointed out that (1) the public has not been made aware of the availability of the program and therefore has not sought its use; (2) eligibility may still be too restricted; and (3) the actual need for such a service in the over-all availability of medical care throughout the state may have been exaggerated.

The report stated that the Chairman of this Committee, in his capacity as medical consultant to the Department of Public Welfare, had circulated a letter to every physician in the state of Tennessee urging him to publicize the medical assistance to the aged program, and insist that eligible patients become certified immediately.

The report pointed out that if the present publicity does not result in a reasonable utilization of the program at an early date, it is believed that the Department of Public Welfare will take a favorable view to broadening the scope of the program, both in regard to the eligibility requirements and services rendered.

The Committee urged the House of Delegates to take action to promote usage and usefulness of the medical assistance to the aged program. The report concluded with certain recommendations for each physician to be vigilant in his awareness of the broadening scope of medical assistance to the aged and to make full use of its benefits in behalf of his patient. Recommendations to broaden the scope of services were outlined and a recommendation for broadening the base of eligibility to include all those whose financial position precludes eligibility for presently proposed insurance coverage.

#### Report of Public Service Committee

WALTER L. DIVELEY, M.D., Chairman

The report stated that well organized and articulate groups are mounting every effort to distort and destroy the traditional image of the medical profession and medi-

cine must counteract such moves. It was related that the Committee had attempted during the year to protect the true image of the profession in its activities at the state level and through stimulating good public service programs at the county society level.

It was revealed that the Committee is working toward the implementation of Resolution No. 10, adopted by the House of Delegates in 1961, wherein a sub-committee on aging was established to encourage the development of nursing, custodial, convalescent and chronic illness facilities for the aged and infirm by church groups and religious organizations.

It was reported that the Committee and staff work closely with county medical societies in suggesting public service programs and assisting them through supplying materials. A constant endeavor is being made to create an awareness of the importance of such activities.

The Committee sponsored four public relations courses for medical assistants during the year. These were held in Nashville, Chattanooga, Knoxville and Jackson and were attended by more than 700 medical assistants from the areas in which the courses were held.

The Committee reported that it has worked closely with the news media throughout the state and that timely press releases documenting important policy decisions of the Association in relating the progress of medical service in Tennessee were distributed. "Information so disseminated reflects the activities of all the many working facets of the State Medical Association." The activities of the physician's placement service were reported. It was stated that 59 applications for "location wanted" were processed, with 23 being located, 2 cancelled and 34 currently on file. Forty applications for "physician wanted" were processed, with 10 being filled, 2 cancelled and 28 currently on file. There were 258 inquiries answered or forwarded.

The report stated that the Committee works closely with allied health professions to improve interprofessional relations and upon programs of mutual importance to the medical profession and the allied health groups. Another activity reported was the

continual dissemination to the membership of information on all phases of the medical assistance to the aged program and the reporting of the changes in the program which have taken place with respect to broadening eligibility and services. The report reviewed the sponsorship by the Committee of a public service breakfast in connection with the annual meeting.

The report strongly urged county medical societies to continually analyze and evaluate their public service programs and to seek constantly opportunities for expansion of current activities and inauguration of new projects.

#### **Report of Grievance Committee**

JAS. C. GARDNER, M.D., Chairman

The report revealed that the State Grievance Committee received a varying number of grievances each year and explained it had been the policy of the Association and the Committee to refer these to the county medical societies where the doctor resides and where the grievance occurred. In this way, most grievances can be solved at the county society level and brings the doctor and the patient making the complaint together at the local level where a settlement may be more readily reached.

The report stated that in 1961, only one grievance reached the state Committee for action. In executive session, the Committee reviewed the details of correspondence and the information gathered about the case presented. The Committee had invited all persons involved to be present at the hearing. Those who chose to attend were given an opportunity to present their views in the case. Prior to the meeting, the Committee had made studies and gathered information from throughout the state for charges made by specialists involved in the type of case brought before the Committee.

Since the grievance dealt with charges, the action taken by the Committee was in the form of a recommendation of an amount that was considered to be equitable and the physician involved was notified and copies of the notice sent to the Judicial Council of the County Medical Society where the patient and physician reside.



### Report of Rural Health Committee

JULIAN C. LENTZ, JR., M.D., Chairman

The Chairman stated that the Committee felt it could be more efficient if its composition were reduced in size. A request was made to the Board of Trustees that the number of Committee members be reduced to five with three members from TSMA, one member from the Tennessee Farm Bureau and one member from the University of Tennessee Extension Service.

It was reported that the Committee held a meeting in December, 1961, for the purpose of planning a rural health conference for Tennessee to be held in Nashville in the fall of 1962. It was felt that this meeting could be especially effective if members of the Tennessee Farm Bureau Federation and the University of Tennessee Extension Service could be thoroughly utilized.

The proposed State Rural Health Conference has been tentatively planned to include such subjects as the medico-economic aspects of rural medicine, practical approach to mental health, some explanation of the King-Anderson and the Kerr-Mills bills and possibly something on rural safety.

The report concluded by stating that the Rural Health Conference is still in the planning stage and that a complete and perhaps successful report can be made at the next meeting of the House of Delegates.

### Report of Tennessee Medical Foundation Committee

HARRISON J. SHULL, M.D., Chairman

The report opened by stating that the Tennessee Medical Foundation has continued its interest in two areas: (1) professional consultative services in several East Tennessee Communities, and (2) to study of ways to help communities who wish to improve and maintain excellence of supportive medical services such as laboratory, x-ray and hospital administration, particularly in smaller communities.

"The professional consultative services in medicine, surgery, and x-ray at Oneida and Monterey, as reported last year, have continued. Specialists in various fields of medical practice selected through the Tennessee Medical Foundation's Committee on Medical Care, have gone by pre-arrangement to

these communities to help with problem cases."

"The Tennessee Medical Foundation is studying ways in which the Foundation may help with the accepted interest of the Tennessee State Medical Association in the elevation of the quality and the adequate distribution of medical care to the people of the state."

The report pointed out that dependable and adequate diagnostic facilities such as laboratory services and x-ray diagnosis are essential to good medical care, and these are not always easy to establish and maintain in some of the smaller communities. Of comparable importance is good hospital administration. It was stated that the communities in need of advisory assistance in these fields may welcome a medium within our state association through which their requests for assistance may be channelled to these professional groups who are best qualified and able to give expert advice in these fields, such as the members of the Tennessee Society of Pathologists, the Tennessee Radiological Society, the Tennessee Hospital Association.

The report concluded by the Committee pointing out that it believed that the principles involved are good and are important in the accomplishment of the worthwhile purpose of the State Association to take the initiative in helping TSMA members to furnish the highest possible quality of medical care to patients. The Committee invited comments and suggestions concerning activities of the Tennessee Medical Foundation.

### Committees Not Reporting

Standing committees not making a report to the House were:

1. Committee on Insurance
2. Cancer Committee

**All of the above reports of standing committees were referred to the Reference Committee on Reports of Standing Committees—Reference Committee A.**

### SPECIAL COMMITTEES

**Report of the Consultative Committee on the Administration of Prepaid Medical Care Plans**

C. N. GESSLER, M.D., Chairman

The report pointed out that the success

of prepaid medical care plans in existence depends on mutual cooperation of physician and consumer or consumer agencies. The Consultative Committee on Prepaid Medical Care Plans was directed to study the problem of utilization of prepaid medical care plans over a wide range of their application as involving physicians, insurance, industry, and the policyholder.

The report reviewed the early stages of the Committee's work and surveys made in the smaller community hospitals over the state. A total of four county hospitals were studied and these studies dealt with cost, length of hospital stay and the total number of patients involved in hospitalization. Comparison had been made between patients who do and who do not have third party coverage for payment of their hospitalization.

The Committee reported to the Board of Trustees in October, 1961, that there were insufficient funds to complete the study and requested an additional \$1,800 to be allocated for use for further study. This request was granted.

The Committee reported that it is now awaiting the report of the survey of three metropolitan hospitals. Until all data is collected and evaluated, the Committee could only report that the work is in progress and that within the next few months, significant information in regard to the utilization of prepaid medical care plans, with special reference to abuse and misuse will be available.

#### **Report of Committee on Disaster Planning**

MOORE MOORE, JR., M.D., Chairman

The report opened by stating that the Committee had no formal meetings during the year. It was reported that the Chairman of the Committee and the Chairman of the Postgraduate Education Committee met in Memphis to discuss a proposed Disaster Planning program in the state.

The Chairman of the Committee reported that he again attended the County Medical Societies Conference on Disaster Medical Care which was held in Chicago in November, 1961.

It was reported that Mr. Maguire of the TSMA staff, attended the workshop and training program for Medical Self-Help as

sponsored by the Department of Health, Education and Welfare. This was conducted in Battle Creek, Michigan, in December, 1961.

As a result of participation in these joint meetings, the following recommendations are made:

1. That the Tennessee State Medical Association through its Committee on Postgraduate Education, disseminate the information available in the Medical Self-Help training program.
2. That the plan and opinions expressed by Dr. John Ivins, Mayo Clinic, be considered as a model and applicable to Tennessee as regards preparation for thermonuclear attack in cooperation with surrounding states.
3. Emphasis was made that the work of the Committee should be done by a full-time, adequately compensated person. The report called for the Commissioner of Public Health to be petitioned to employ such a full-time individual. Also recommended was adequate liaison between the Commissioner of Public Health and the Medical Association.
4. That reciprocity be established between Tennessee and neighboring states so that physicians, when required by necessity, may not be bound by political confines and thus be unable to practice in neighboring states at the time of disaster.
5. Urged that the good Samaritan Law be passed by the next Tennessee General Assembly.

The report stated that the question of upgrading and training of all health professions and services seemed to be proper and immediately necessitates function of this committee in conjunction with the Postgraduate Education Committee.

#### **Report of Committee on Occupational Health**

GEORGE E. DUNCAN, M.D., Chairman

The report stated that as a follow-up to the forty-eight hours of postgraduate instruction on Occupational Health conducted in ten cities during February, 1961, all members attending these meetings were urged, by a letter from the Council on Occupational Health of the American Medical Association to attend the Congress on Occupational Health held in Denver in October, 1961.



The Committee reported: (1) Specific information regarding occupational health was supplied on request to 43 physicians through the state during the year. (2) The Chairman attended a meeting of chairmen of state occupational health committees conducted by AMA in St. Louis in 1961, and a summary of the meeting was supplied to all members. (3) A file of the most interesting papers on Occupational Health is being compiled for use by local and county medical societies. (4) A survey of physicians interested in occupational health was made in Davidson County. Plans were made to encourage reactivation of Occupational Health Societies in counties where sufficient industries exist. (5) The Chairman attended the Congress on Occupational Health held in Denver in October, 1961, and 35 concise statements concerning Occupational Health were submitted to the Tennessee State Medical JOURNAL for publication at the discretion of the Editor. (6) Local medical societies are urged to include programs on occupational health in their meetings at some time during the year. (7) Occupational health kits were sent to interested nurses in the Davidson County area.

**Report of Liaison Committee to  
United Mine Workers of America**

JOHN H. SAFFOLD, M.D., Chairman

The report stated that judicious education and mediation on the part of Committee members and the area director of the Welfare Fund had solved problems in one community hospital revolving about the following topics: (1) prolonged hospital stay, (2) lax criteria for hospitalization, (3) itinerant surgery. The report stated that it was felt that resolution of this problem had been of major importance.

It was reported that problems had been resolved without formal action of the Committee but rather by consultation and mutual mediation. "In the majority of instances the physicians in the area have been judicious in utilization of hospital facilities and in charges for services performed through the fund. Close liaison between

Committee members and the administrator has kept the Committee well informed of these matters at all times." The report concluded by stating that the activities of this Committee had been of value to medicine in Tennessee.

**Report of Advisory Committee to  
Woman's Auxiliary to TSMA**

WM. A. GARRETT, M.D., Chairman

The Chairman stated that the Committee had lost one of its most dedicated members during the year in the death of Dr. Joseph D. Anderson, Nashville.

The report extended congratulations to the Auxiliary upon its energetic and consecrated pursuit of the objectives it has set up for itself and its efforts in behalf of the interests of the Tennessee State Medical Association. Their efforts in the fight against medical socialism were stressed, and the report urged that every component society of the Tennessee State Medical Association encourage the wives of members to organize and join the Auxiliary in this worthwhile and important fight. It was stated that Auxiliary members wanted to help doctors if they were only allowed to do so, and the report urged that physicians encourage and support the Auxiliary.

**Report of Committee on Mental Health**  
FRANK H. LUTON, M.D., Chairman

Tennessee is 48th in the nation in expenditures for its mentally ill. There are now 9,150 patients residing in its hospitals with a total of 47 physicians and 56 registered nurses to treat them. The report stated that the medical profession should assume leadership in a search for solutions and in the "coordinated sustained effort which must be made by professional and lay groups to make those solutions work."

The report reviewed some of the major conferences conducted throughout the nation and various reports emanating from the American Medical Association.

The Chairman made a plea that physicians support the AMA in its program that will get underway in October, 1962. The report recommended that in order to sup-

plement the studies made at the national congress on mental health, that the Tennessee State Medical Association support a conference during 1963 in collaboration with the Tennessee Mental Health Association and the Mental Health Committee of the Woman's Auxiliary of TSMA.

The report concluded by stating that the Committee held one formal meeting during the year, but many other meetings of one or two members had been held to discuss functions of the Committee. These functions included: participation in programs of continuing education of the non-psychiatric physician; cooperation with the Legislative Council in its studies on Alcoholism and the emotional problems of children; participation on various lay boards and committees whose activities have mental health objectives; participation in planning for an inservice education workshop for meeting the mental and emotional needs of children of the Nashville schools.

#### Report of Committee on Health Project Contest

MRS. ALFRED N. COSTNER, Chairman  
(Presented by MRS. LAWRENCE COHEN)

The report stated that the purpose of TSMA's Health Project Contest is to teach Tennessee Youth the value of good health through practical group-project activities.

The first place award in the Ninth Annual Health Project Contest went to the Biology Classes of White County High School in Sparta for their project in the field of diabetes detection. Two hundred and forty students participated in the project. (The first place prize of \$400 was presented to representatives of the White County High School at the President's Banquet of TSMA.) Second place was won by the Immaculate Conception Science Club of the Immaculate Conception High School, Memphis, for a project dealing with prevention of accidental poisoning. Central High School, Fountain City (Knoxville) and Central High School of Chattanooga, were awarded third and fourth place respectively for their work on projects in the field of mental health.

The report explained the diminishing popularity of the Health Project Contest and it was recommended that a re-evalua-

tion of the contest be made at an early date before the next year's procedures of planning get underway. It was stated that high schools in larger cities have so many extracurricular activities that they seem reluctant to attempt to make time for such an involved activity. School administrators are swamped each year with requests for students to participate in essay contests, poster contests, etc. and teachers feel that "free time" for such a project is at a minimum and in some instances does not exist.

The report stated that county health project chairmen feel a definite lack of response, a lack of enthusiasm and not worthy of all the effort involved.

The Chairman of the Committee recommended that a study be made of the entire activity and further that the State Chairman of the Health Project Committee should reside in the city in which the TSMA annual meeting is held each year. The report concluded by urging the entire contest to undergo a thorough and complete review.

#### Report of Sight Conservation Committee

ROLAND H. MYERS, M.D., Chairman

The major activity of the Committee during 1961 had been to decide on a standard formula for the evaluation of visual defects that occur as the result of injury or disease in cases where the degree of disability is to be determined in percentage of visual loss, or in percentage of impairment of the visual system.

Since a survey made by the Committee revealed that the same standards were not used by all ophthalmologists throughout the state, the Committee concluded that a standard recognized method should be adopted.

The Committee determined to follow a guide compiled by the Committee on Medical Rating of Physical Impairment, titled, "Guides to the Evaluation of Permanent Impairment, The Visual System," published in the JOURNAL of the American Medical Association, September 27, 1958.

The report stated that the Committee is in the process of determining when an eye is to be considered blind and concluded by stating that no further recommendations



would be made by the Committee at the present time.

**Report of Tennessee Committee for  
American Medical Education Foundation**

B. F. BYRD, JR., M.D., Chairman

The Committee's program during the year had been conducted in cooperation with Tennessee's Schools of Medicine.

The report revealed that according to information supplied by the American Medical Education Foundation, Tennessee physicians contributed \$16,223.34, an increase of more than 30 percent over the previous year. It was stated that the Woman's Auxiliary to TSMA had conducted a vigorous campaign which secured contributions amounting to \$5,838.34, making Tennessee's total contribution \$22,062.69.

The report also revealed that Tennessee's three medical schools received grants amounting to \$41,775.26. This figure represents basic grants from undesignated contributions as well as gifts designated for Tennessee Medical Schools from physicians practicing outside the state. The funds were distributed as follows:

Vanderbilt University School of Medicine—\$20,041.57

University of Tenn. School of Medicine—\$16,018.62

Meharry Medical College \$5,716.07

The report stated that only six other states received larger amounts than Tennessee. All of these were states with a large population (California, Illinois, Indiana, New York, Ohio and Pennsylvania).

Upon request of the Committee, the TSMA Board of Trustees reconstituted the membership of the committee to provide for two members from the State Medical Association, and one from each of Tennessee's three medical schools.

At the national level, the American Medical Education Foundation has been combined with the American Medical Research Foundation to form the American Medical Education and Research Foundation. The program will include:

1. a medical journalism fellowship;
2. a loan fund for medical students, interns, and residents;
3. research grants for medical research workers;

4. a study of perinatal mortality and morbidity;
5. a study of continuing medical education; and
6. an honors and scholarship project.

The report concluded by stating that the Committee would like to stress that until and unless physicians make an annual contribution to AMA-ERF, they will be falling short of the intended goal. Physicians must help to assure a free profession in the future and one that looks to those in the practice of medicine for its students rather than to politicians.

**Report of Committee on Youth and Education**

JOHN H. BURKHART, M.D., Chairman

The Committee report revealed that one meeting was conducted during the year at which four of the six members were present. The chief business of the meeting was to plan the participation of representatives of TSMA in the annual coaches school to be held in Cookeville, Tennessee, July, 1962. The Athletic Injuries Clinic for 1962 could best be coordinated with the coaches school in order to reach approximately four or five hundred coaches, and plans were made to include two one-hour lectures by TSMA members as a part of the clinic. One hour was devoted to "The Physiology of Physical Exertion" and one hour to "The Emotional Aspects of Athletics."

The report stated that the Committee had spent considerable time in discussing a proposal to establish a loan fund by the Tennessee State Medical Association which would assist medical students in continuing their education. (A resolution was presented to the House of Delegates to this effect.)

At the request of the Commissioner of Public Health, the Committee reviewed a wall chart entitled "Recommended Procedures for Emergency Care of Sickness and Accidents Occurring at School" which the State of Tennessee Department of Public Health was considering for distribution to each school in the State.

The Chairman stated that the Committee had placed its approval on the chart and its contents, recommended and obtained approval from the Board of Trustees of TSMA and authorized the Commissioner of Public

Health to add a notation that the chart had been approved by the Tennessee State Medical Association.

**All of the above reports of Special Committees were referred to the Reference Committee on Reports of Special Committees—Reference Committee B.**

Special Committees not submitting reports were:

- Committee on Blood Banks
- Committee on Governmental Medical Services
- Committee on Tuberculosis
- Committee on Legal Relations and Inter-professional Code
- General Liaison Committee

### SPECIAL REPORTS

#### Report of Woman's Auxiliary to TSMA

MRS. E. E. WILKINSON, President

The report pointed out that the Auxiliary program was designed to guide and teach the individual member to be a wiser citizen; a more helpful neighbor; a better working member of the groups in which she serves her community.

The program of activity in legislative affairs was reported. Records, pamphlets, book reviews and many forms of communication were utilized by the Auxiliary in spreading the message of medicine and its legislative program to related groups. Activities of the Women Help American Medicine (WHAM) campaigns were reported.

The Chairman stated that all auxiliaries reported at least one formal legislation program and reports of legislative activity at each meeting. Many letters had been written not only by the wives of doctors, but their friends, to representatives, to committee members, to editors, to publishers and community groups to which they belong have been encouraged to pass resolutions opposing the enactment of the King-Anderson Bill.

The report contained the statement that the Tennessee Auxiliary, for the second consecutive year, had won the silver trophy for outstanding work in behalf of AMEF. The Tennessee Auxiliary also won a merit award for placing second nationally for per capita giving.

The report stated that well informed

Auxiliary members disseminated accurate information on medical care costs, voluntary health insurance, medical legislation, and facilities available for the aging as they worked beside their neighbors in PTA, in scouting, in cancer drives, in bloodmobile programs, in church activities. Untold numbers of man hours had been given to these community services.

The report stated that monies totaling some \$18,000 are available as loans for anyone interested in pursuing a health career. Twenty-nine student nurses and two medical students are being assisted now. Seven Auxiliaries sponsor or assist with Future Nurses Clubs. One assists the medical society with a Future Physicians Club. Seven groups helped with Career Day programs. The booklet "Health Careers in Tennessee" has widespread distribution and the films, "Helping Hands for Julie" and "I Am A Doctor" have been used.

The report stated that mental health centers continue to receive the support of the Auxiliary; auxiliaries are sponsoring driver education programs, highway safety, the use of seat belts; and the health project contest is being promoted each year.

It was reported that fourteen auxiliaries representing fifty-four counties compose the Woman's Auxiliary to TSMA. There is a total potential membership of 2800. Approximately one-half that number is now realized.

The report concluded with the request that doctors' wives be urged to cooperate and join in the Auxiliary program to present a more effective partner in medicine.

#### Report of AMA Delegation

CHAS. C. SMELTZER, M.D., Chairman

The report of the AMA delegation constituted a brief abstract of the main actions of the House of Delegates at the New York and Denver meetings in 1961. The report opened by stating the actions of the AMA House in June, 1962, dealing with osteopathy wherein the AMA took action to re-appraise its application of policy regarding relationships with doctors of osteopathy.

It was pointed out that policies are now to be applied individually at state levels, according to the facts as they exist. Previ-



ously this policy has been applied collectively at the national level.

Medical discipline was reported as acted upon in the House of AMA.

The communications program as operated by AMA was revised in detail wherein seven elected members of the House of Delegates were named to form a special committee "to study and continually advise the Board of Trustees on the broad planning and coordination of all phases of communications of the American Medical Association so that the public and members of the medical profession are properly and adequately advised of the policies and concern of the medical profession with respect to all phases and aspects of medical care for all people."

On the subject of surgical assistants, the AMA House adopted five basic principles developed by the Judicial Council and the Council of Medical Services.

Other subjects reported as the result of action by the AMA House of Delegates in June included general practice residencies; relations with other health professions and services; polio vaccine; Kerr-Mills program; drug information program; and fallout shelter.

The report stated that the resolution from Tennessee on tetanus was adopted.

At the Denver meeting in November, 1961, five resolutions were introduced expressing dissatisfaction over statements by the American College of Surgeons. The House approved the purposes and goals of the recently organized American Medical Political Action Committee and urged all physicians, their wives and interested friends to join AMPAC and other political action committees in their states and communities.

Medical discipline was discussed on the floor of the House as presented by the Medical Disciplinary Committee, but recommendations were referred to the Council on Constitution and By-Laws.

Polio vaccine again received discussion along with accreditation of hospitals, drugs, the Medicare program, seat belts, mass immunization, and further investigation of the American Board of Abdominal Surgery. On the subject of the Board of Abdominal Sur-

gery, the House instructed the Council on Medical Education and Hospitals to study its present and potential contribution to the advancement of the art and science of surgery and the betterment of public health, to determine whether it should be approved as a recognized examining Board.

**The Special Reports were referred to the Reference Committee on Reports of Special Committees—Reference Committee B.**

**Report of Reference Committee on  
Outstanding Physician of Year Award**

JAS. C. GARDNER, M.D., Chairman

The Speaker announced that the next order of business would be the report of the Reference Committee on the Physician of the Year Award and the election.

Dr. Jas. C. Gardner stated that in accordance with provisions of the Reference Committee on Outstanding Physician of the Year, the Committee wished to nominate for consideration of the House, three physicians for the award. They were: Dr. John J. Lentz, Nashville; Dr. Ralph H. Monger, Knoxville; and Dr. Lea Callaway, Maryville.

The Speaker called for the customary five-minute nominating speeches for each of the candidates. Dr. Chas. C. Trabue spoke in behalf of Dr. Lentz; Dr. H. Dewey Peters, Knoxville, spoke in behalf of Dr. Monger; and Dr. Robert H. Haralson spoke in behalf of Dr. Callaway. In the presentation, Dr. Haralson withdrew the name of Dr. Callaway for consideration and urged support for Dr. Monger.

Following the nominating speeches, the Speaker asked members of the House to prepare their ballots. Tellers were appointed to count the ballots. Prior to voting, the Speaker asked the will of the House as to whether such an election would require a plurality or a majority. It was the consensus of opinion of the House that a majority be used in the election.

**Election of Physician of the Year**

The result of the balloting for the outstanding physician of the year award was announced by the Speaker and Dr. John Lentz of Nashville was named the outstand-

ing physician of the year in Tennessee for 1962.

#### Election of Councilors

The Speaker called upon the Chairman of the Nominating Committee to present the slate of councilors selected by the Nominating Committee. In the absence of the Chairman, Dr. Ernest G. Kelly, the report was made by Dr. John H. Burkhart, Secretary for the Nominating Committee.

Dr. Burkhart stated that the Committee had nominated councilors from Districts One, Three, Five, Seven and Nine. Councilors nominated were as follows:

J. O. Hale, Johnson City—First District  
M. F. Langston, Chattanooga—Third District  
Coulter S. Young, Manchester—Fifth District  
W. K. Owen, Pulaski—Seventh District  
R. David Taylor, Dyersburg—Ninth District

Following the nomination, the House voted upon the nominees individually and the persons presented by the Nominating Committee were elected Councilors for the respective Districts named. In each instance, the Speaker called for additional nominations from the floor. There were none.

#### Other Business

The Speaker called for any old or unfinished business and there being none, he called for any new business to be presented. No new business was brought before the House. The Speaker called for announcements.

The Chairman of the Council and chairmen of the various reference committees of the House announced the times and places of the meetings of their committees for the following day.

There being no further business, the first session of the House of Delegates recessed at 5:25 p.m. until 9:00 a.m. Tuesday, April 10, 1962.

#### TUESDAY MORNING SESSION

April 10, 1962

The House of Delegates reconvened at 9:00 A.M. in the Peabody Hotel, Memphis, with Dr. Joseph W. Johnson, Jr., Speaker

of the House, presiding. Dr. Oscar McCallum, Henderson, Chairman of the Credentials Committee, reported that a quorum of the delegates was present.

The first order of business was the introduction of additional amendments.

#### Introduction of Additional Amendments

The Speaker called for any additional amendments to the Constitution and By-Laws. The Reference Committee on Amendments introduced an amendment to the Constitution and also an amendment to the By-Laws. The Council presented an additional amendment to the By-Laws.

#### Constitutional Amendment

##### CA No. 4

By: Dr. Addison B. Scoville, Chairman of the Reference Committee on Amendments to the Constitution and By-Laws, would amend Article VIII, Section 8 by eliminating the language "or vice-president." This Amendment would primarily change the Constitution to make any member who has been a member for five years eligible for the office of Vice-President, whether he is present or not at the annual meeting.

#### By-Laws Amendments

##### BA No. 4

By: Dr. Scoville, Chairman of the Reference Committee on Amendments, would amend Chapter XII, Section 11 of the By-Laws by deleting the words "at least ten days before the annual meeting" and substituting the words, "on or before January 1 preceding the annual meeting."

##### BA No. 5

By: The Council submitted an amendment to the By-Laws to amend Chapter IV, Section 2 by adding to the end of the Section, a requirement for delegates of county medical societies to be seated in the House only after the county society had submitted its councilor report to the Councilor of the District where the county medical society is located.

The above amendments were referred to the Reference Committee on Amendments to the Constitution and By-Laws.

#### Introduction of Additional Resolutions

The following resolutions were introduced:



**RESOLUTION NO. 10A**

By: Dr. John Hughes, Chairman of the Reference Committee on Resolutions

Subject: Tennessee Senior Citizens Prepaid Medical Insurance Plans

**RESOLUTION NO. 6A**

By: Dr. A. Roy Tyrer, Jr., Memphis

Subject: Student Loan Fund

The resolutions were referred to the Reference Committee on Resolutions.

**Introduction of Guests**

The Speaker introduced Mrs. Harlan English of Danville, Illinois, President of the Woman's Auxiliary to the American Medical Association. Mrs. English replied with a brief address to the delegates. The Speaker also introduced Mrs. W. W. Hubbard, Nashville, a delegate to the Woman's Auxiliary to the American Medical Association. The Speaker also introduced the Outstanding Physician of the Year for 1961, Dr. John Steele, Chattanooga.

**Report of Nominating Committee  
and Election of Officers**

ERNEST G. KELLY, M.D., Memphis, Chairman

The Chairman of the Nominating Committee submitted the following slate. (In each instance the Speaker called for additional nominations from the floor. There were none.)

President-Elect—Dr. Bland W. Cannon, Memphis

Speaker of the House of Delegates—Dr. J. Malcolm Aste, Memphis

Vice-Speaker of the House of Delegates—Dr. Tom E. Nesbitt, Nashville

Secretary-Editor—Dr. R. H. Kampmeier, Nashville

Trustee from East Tennessee (3-year term)—Dr. Joseph W. Johnson, Jr., Chattanooga

Vice President (East Tennessee)—Dr. J. W. Erwin, Blountville

Vice President (Middle Tennessee)—Dr. Robert F. Baker, Sparta

Vice President (West Tennessee)—Dr. Oscar McCallum, Henderson

Delegate to American Medical Association (East Tennessee)—Dr. Chas. C. Smeltzer, Knoxville

Alternate Delegate to American Medical

Association (East Tennessee)—Dr. Wm. J. Sheridan, Chattanooga

Six physicians for the Public Health Council, three from East Tennessee and three from West Tennessee—two to be subsequently appointed by the Governor:

East Tennessee—

Dr. Ira Pierce, Knoxville

Dr. L. A. Killeffer, Harriman

Dr. Lyle Smith, Kingsport

West Tennessee—

Dr. Lamb B. Myhr, Jackson

Dr. Moore Moore, Jr., Memphis

Dr. Nobel W. Guthrie, Memphis

**All of the nominees submitted above were elected by the House of Delegates**

The election of Dr. Bland Cannon as President-Elect made a vacancy on the Board of Trustees and the Nominating Committee submitted the name of Dr. Henry B. Gotten, Memphis, to complete the unexpired term of Dr. Cannon.

Upon voice vote, Dr. Gotten was elected for a one-year term to the Board of Trustees to complete the unexpired term of Dr. Cannon.

There were no nominations made from the floor for any of the offices to be filled.

Upon the completion of voting for all nominees, the Speaker appointed a Committee to escort the new President-Elect to the Scientific Session where he would be presented to the membership.

The Speaker announced that the next order of business was the Report of the Reference Committee on Amendments to the Constitution and By-Laws.

**Report of Reference Committee on Amendments  
to Constitution and By-Laws**

ADDISON B. SCOVILLE, JR., M.D., Chairman

**Constitution—Amendment No. 1**

“Amend Article I and Article V of the Constitution by deleting the word ‘State’ from the name of the Association.

Article I: The name and the title of this organization shall be ‘The Tennessee Medical Association.’

Article V: The House of Delegates shall be the legislative and business body of the Association, and shall consist of (1) Dele-

gates elected by the Component Societies; (2) ex-officio the Officers; (3) the five most recent surviving ex-Presidents of the Association, except that all ex-Presidents who were living in April 1956 shall be members for life; (4) the Association's delegates to the American Medical Association, the Commissioner of Public Health and the Commissioner of Mental Health for the State of Tennessee, provided such Commissioner of Public Health or Mental Health is a member in good standing of the Tennessee Medical Association."

**The Reference Committee recommended adoption of Amendment No. 1 to the Constitution.**

**ACTION: LIES ON TABLE UNTIL 1963 ANNUAL SESSION**

**Constitution—Amendment No. 2**

"Amend Article VIII, Section 1 by eliminating the hyphenated words 'Secretary-Editor' and substituting the word 'Secretary.'

Section 1: The officers of the Association shall be a President, President-Elect, a Vice-President for each of the three grand divisions of the State, a Secretary, the six elected Trustees, ten Councilors, a Speaker of the House of Delegates, and a vice-speaker of the House of Delegates.

"Amend Article VIII, Section 2, Paragraph 1 by deleting the words, 'Secretary-Editor of the JOURNAL' and substituting the word, 'Secretary.'

Section 2: The Board of Trustees shall consist of the President of the Association, the Speaker of the House of Delegates, the immediate Past-President, the President-Elect, the Secretary, and six members elected by the House of Delegates as hereinafter provided.

"Amend Article VIII, Section 2, Paragraph 3 by deleting the last sentence entirely, changing the period following the preceding sentence to a comma, and adding 'and a Treasurer from the six elected as Trustees.'

Section 2, Paragraph 3: The elected Trustees shall serve for a period of three years and no Trustee shall be eligible immediately to succeed himself. The Board of Trustees will organize by the election of a Chairman, and a Treasurer from the six elected as Trustees.

"Amend Article VIII, Section 4 by deleting the words 'the Secretary-Editor' and substituting the words 'a Secretary.' Also amend Section 4 by deleting the comma after the phrase 'for one year' and inserting a period; by deleting the next word, 'and' and begin a new sentence with the next word 'The.' Insert the words, 'and the Secretary' after 'The Speaker of the House' and before 'shall hold office for not more than four consecutive years.'

Section 4: The President-Elect, the three Vice-Presidents, a Secretary and the Speaker of the House of Delegates shall be elected annually for one year. The Speaker of the House and the Secretary shall hold office for not more than four consecutive years. The President-Elect shall assume office as President at the expiration of the term of the President.

"Amend Article VIII, Section 5 by deleting the period at the end of the sentence after the word Council and adding 'without vote.'

Section 5: The President, Secretary, and Speaker of the House of Delegates shall be ex-officio members of the Council without vote.

"Amend Article VIII, Section 7 by deleting the comma after the word 'Association' and deleting the words 'except the Councilors.' Also delete the comma following the words 'except the Councilors.'

Section 7: All officers of the Association shall be elected at the second regular session of the House of Delegates, and they shall assume office when elected."

**The Reference Committee recommended adoption of Amendment No. 2 to the Constitution.**

**ACTION: LIES ON TABLE UNTIL 1963 ANNUAL SESSION**

**Constitution—Amendment No. 3**

"Amend Article IX, Section 1 by adding a sentence at the end of Section 1.

Section 1: The Board of Trustees shall have entire control of the publication, the policy and the editorial and financial management of the JOURNAL of the Association. It shall be authorized and empowered to make all contracts necessary for the conduct of the JOURNAL. It shall appoint the Editor of the JOURNAL.

"Amend Article IX, Section 3, Sentence 1,



by deleting the hyphenated word 'semi-annual' and inserting the word 'quarterly.'

Section 3: The Board of Trustees shall hold quarterly meetings, one of which shall be held on the last day of the Annual Meeting, and such other meetings as the business of the Association may require, subject to the call of the Chairman. The Board of Trustees shall make expenditures of the funds of the Association dependent upon the availability of such funds as determined by the Board of Trustees and as ordered by the House of Delegates. The Board of Trustees shall render at the Annual Session a full and detailed accounting of all receipts and disbursements.

"Amend Article IX, Section 6, Sentence 1, by deleting the words, 'except the Chairman who is ex-officio the Treasurer, whose compensation shall be fixed by the House of Delegates';

Section 6: The Board of Trustees shall serve without compensation, however, their actual expense in attending the meetings of the Board shall be paid out of the funds of the Association. This is not to apply where a meeting is held at the Annual Meeting."

**The Reference Committee recommended adoption of Amendment No. 3 to the Constitution.**

**ACTION: LIES ON TABLE UNTIL 1963 ANNUAL SESSION**

#### Constitution—Amendment No. 4

"Amend Article VIII, Section 8 by deleting the words, 'or Vice-President.'

Section 8: No member who has not been a member in good standing for five years next preceding election, or who is not in attendance at the meeting shall be eligible for election as President-Elect."

**The Reference Committee recommended adoption of Amendment No. 4 to the Constitution.**

**ACTION: LIES ON TABLE UNTIL 1963 ANNUAL SESSION**

#### By-Laws—Amendment No. 1

"Amend Chapter V, Section 2 to read:

On or before March 1st each year, preceding the annual session, the Board of Trustees shall consider the names of the mem-

bers of the House of Delegates of the Association, and select nine delegates, from those eligible, to compose a Nominating Committee. The members of the Nominating Committee shall represent the three grand divisions of the state, with three members from East Tennessee, three members from Middle Tennessee and three members from West Tennessee. No two members of the Nominating Committee shall represent the same county medical society. The Executive Director of the Association shall notify the secretaries of all component medical societies of the names of members of the Nominating Committee, with the request that those members named to the Nominating Committee shall be made known to the membership of each of the component societies.

The Nominating Committee will be supplied, by the Board of Trustees, with the offices that are to be filled and elected by the House of Delegates. Any county medical society desiring to place the name of any physician in nomination for an office of the Tennessee State Medical Association, will have the opportunity to contact its representatives on the Nominating Committee.

It shall be the duty of the Nominating Committee to hold at least one meeting, prior to the opening session of the House of Delegates at a time and place designated by the President of the Association, elect a chairman and consider candidates for offices to be filled. The committee shall report its selection of nominees to the House of Delegates. The Nominating Committee shall name at least one member for each of the offices to be filled at the general session."

The Reference Committee pointed out that Chapter V, Section 5 states that "nothing in this Chapter shall be construed to prevent additional nominations being made by members of the House of Delegates." The Committee stated that this assures the House of Delegates power to reject nominees of the Nominating Committee and replace them with nominees of choice.

**The Reference Committee strongly recom-**

**mended adoption of Amendment No. 1 to the By-Laws.**

**ACTION: A D O P T E D**

**By-Laws—Amendment No. 2**

“Chapter V, Section 2, shall be construed to mean that any delegate appointed by the Board of Trustees to serve on the Nominating Committee shall be a delegate elected by a component medical society in its last election of delegates prior to February 1st of the same year.”

The Reference Committee felt that restriction of delegates to serve on the Nominating Committee to only those elected by a component medical society would deprive the Nominating Committee of much needed wisdom and guidance.

**The Reference Committee recommended that Amendment No. 2 to the By-Laws not be adopted.**

**ACTION: THE MOTION TO REJECT CARRIED**

**By-Laws—Amendment No. 3**

“Amend Chapter V, Section 2, by eliminating the first five words of the section and substituting ‘On or before February 15th’.”

The Reference Committee stated that it appreciated the intent of this Amendment in attempting to have the date of formation of the Nominating Committee set forward, however the Committee had been advised that the difficulty in appointment of members of the Nominating Committee had been due to failure of the component medical societies to certify their delegates at an early date and in an attempt to change this, The Reference Committee had introduced Amendment No. 4 to the By-Laws.

**The Reference Committee moved that Amendment No. 3 to the By-Laws not be adopted.**

**ACTION: THE MOTION TO REJECT CARRIED**

**By-Laws—Amendment No. 4**

“Amend Chapter XII, Section 11, by deleting the words, ‘at least ten days before the Annual Meeting,’ and substituting the words, ‘on or before January 1 preceding the annual meeting.’

Chapter XII, Section 11: At some meetings in advance of the annual Meeting of

this Association, each component Society shall elect a Delegate or Delegates to represent it in the House of Delegates of this Association, in the proportion of one Delegate and one alternate to each fifty members or fraction thereof; and the Secretary of the Society shall send a list of such Delegates to the Secretary of this Association on or before **January 1 preceding the Annual Meeting.**

The Reference Committee stated that this should accomplish two things—First, it would provide a list of elected delegates available for appointment to the Nominating Committee. Second, it would allow the Nominating Committee to be appointed early enough for proper contact between physicians and medical societies and their representatives on the Nominating Committee to suggest nominees for offices in the Association.

**The Reference Committee recommended adoption of Amendment No. 4 to the By-Laws.**

Since the Amendment was introduced on the second day (Tuesday) of the session, the Amendment would lie on the table until the 1963 annual session. However, Dr. John H. Burkhart pointed out that in order to implement By-Laws Amendment No. 1 it would be important for the House to adopt Amendment No. 4 and he also pointed out that the House of Delegates could suspend the rules and vote on that Amendment at the present time. The Speaker stated that it would require the unanimous consent of the House.

The House of Delegates voted unanimously to suspend the rules and vote on By-Laws Amendment No. 4.

**ACTION: By-Laws Amendment No. 4 was A D O P T E D**

**By-Laws—Amendment No. 5**

“Amend Chapter IV, Section 2 by adding at the end of this section, ‘No delegate from any chartered component medical society shall be entitled to be seated in the House of Delegates unless the component medical society which he represents has complied with the requirements of the Association by submitting the report to the Councilor of



the District in which the component society is located.' Section 2 would then read:

Section 2: Each component Society shall be entitled to send to the House of Delegates each year one delegate for every fifty active and veteran members and one for every fraction thereof, based upon the number of such members in the component Society in good standing as of December 1 of the year preceding the session of the House. Each component Society holding a charter from the Association, which has made its annual report and paid its assessment as provided in the Constitution and By-Laws, shall be entitled to at least one delegate. No delegate from any chartered component medical society shall be entitled to be seated in the House of Delegates unless the component medical society which he represents has complied with the requirements of the Association by submitting the report to the Councilor of the District in which the component society is located."

The Reference Committee stated that it was sympathetic with the intent of this Amendment to the By-Laws, but felt that the penalty would be too harsh for the omission of a report to the councilor.

**The Reference Committee recommended rejection of Amendment No. 5 to the By-Laws**  
**ACTION: LIES ON TABLE UNTIL 1963 ANNUAL SESSION**

**The report of the Reference Committee on Amendments to the Constitution and By-Laws was voted upon and adopted as a whole.**

#### Report of Reference Committee on Resolutions

JOHN D. HUGHES, M.D., Chairman

Following are the resolutions presented before the House of Delegates as amended and in final form.

#### RESOLUTION NO. 1

Clarification of the Role and Responsibilities of Physicians and Medical Societies in Civil Defense and Disaster Planning

By: Memphis-Shelby County Delegation

"WHEREAS, the Memphis and Shelby

County Medical Society and its Disaster Planning Committee is charged with certain ill-defined responsibilities for Civil Defense, and

WHEREAS, this Committee lacks the specialized knowledge and authority necessary for the task at hand, and

WHEREAS, Civil Defense information disseminated from several apparently official sources is confusing, if not actually contradictory, and

WHEREAS, the Memphis and Shelby County Medical Society desires the House of Delegates of the Tennessee State Medical Association and the similar body of the American Medical Association to take cognizance of this problem; now therefore be it

RESOLVED, That the House of Delegates of the Tennessee State Medical Association shall urge the American Medical Association to obtain from the U.S. Public Health Service, or the ultimate Federal authority:

- (1) A clarification of the exact role of the individual physician and the several echelons of medical societies in Civil Defense and Disaster Planning, and
- (2) A reconciliation of the conflicting opinions of Civil Defense agencies, chiefly those concerning the relative roles to be played by evacuation and by shelter building,

and be it further

RESOLVED, that the delegates from the Tennessee State Medical Association to the House of Delegates of the American Medical Association be instructed to introduce a similar resolution at the next meeting of the House of Delegates of the AMA, requesting the American Medical Association to obtain the information set forth in the first 'Resolved.'"

**ACTION: ADOPTED**

#### RESOLUTION NO. 2

Visiting Nurse and Medical Home Care

By: C. D. HAWKES, M.D., for the Committee on Hospitals

"WHEREAS, visiting nursing service and the implementation of this service through medical home care may serve to decrease the cost of illness and the length of hospital-

ization under numerous circumstances, and

WHEREAS, visiting nurse programs and programs of medical home care have proved effective in various parts of the country in shortening the hospital stay and making possible better utilization of hospitals, and

WHEREAS, both financial and psychological benefits may accrue to the patient through shortening his hospital stay and restoring him to his home environment, now therefore be it

RESOLVED, that the House of Delegates of the Tennessee State Medical Association urge its component county medical societies to appoint committees to review the problem of Visiting Nurse and Home Medical Care and formulate a program suitable for their own areas which may be centered about a Visiting Nurse Association, a local hospital, a local Health Department, or other agency which may seem most effective for the community concerned, for the purpose of benefiting the patient by restoring him more quickly to his home after an illness requiring hospital confinement, reduce the cost of medical and hospital care, and promote better utilization of hospital beds in the state."

**ACTION: A D O P T E D**

### RESOLUTION NO. 3

(AMPAC) American Medical Political  
Action Committee

By: R. M. FINKS, M.D., Chairman,  
Board of Trustees

"WHEREAS, through the impetus of the American Medical Association, a voluntary, non-profit, unincorporated organization known as the American Medical Political Action Committee has been established with headquarters in Chicago, and

WHEREAS, the purposes of AMPAC are: (1) to promote and strive for the improvement of government by encouraging and stimulating physicians and others to take a more active and effective part in governmental affairs; (2) to encourage physicians and others to understand the nature and actions of their government as to important political issues and as to the records, officeholders and candidates for elective office; (3) to assist physicians and others in organizing themselves for more effective political

action and in carrying out their civic responsibilities; and (4) to do any and all things necessary or desirable for the attainment of the purposes stated above, and

WHEREAS, membership in AMPAC is open to licensed doctors of medicine, their spouses, members of their immediate family and employees of non-profit medical societies or associations, and

WHEREAS, on January 14th, the Board of Trustees of the Tennessee State Medical Association adopted a motion that the Board recommend that the House of Delegates of TSMA be informed of the purposes of AMPAC and to advise the House that the TSMA Board of Trustees endorses the purposes of the American Medical Political Action Committee, and

WHEREAS, the Board of Trustees recommends that no TSMA funds are to be used in this activity but strongly encourages individual participation, now therefore be it

RESOLVED, that the House of Delegates of the Tennessee State Medical Association endorse the purposes of AMPAC and urge the Tennessee State Medical Association and members of their families, to assist in financing AMPAC, by becoming members and making a voluntary financial contribution, and be it further

RESOLVED, that the House of Delegates of the Tennessee State Medical Association commend and endorse the purpose and efforts of members of the Association who, on their own initiative, may choose to form or participate in a Tennessee Medical Political Action Committee which will coordinate its work with the American Medical Political Action Committee."

**ACTION: A D O P T E D**

### RESOLUTION NO. 4

Immunization of Children

By: C. D. HAWKES, M.D., Liaison Committee  
to the Public Health Department

"WHEREAS, immunization against smallpox, tetanus, diphtheria, pertussis, and poliomyelitis in childhood is important for the health of the children of our State, and indeed its whole population, and

WHEREAS, statistics of the Public Health



Department show that many children go unimmunized in spite of school regulations, the activities of the Department and private physicians, and

WHEREAS, immunization procedures have proved effective and safe in achieving their purposes, now therefore be it

RESOLVED, that the House of Delegates of the Tennessee State Medical Association urge all its members to be diligent in carrying out and encouraging these immunization procedures in children before they reach school age, and that the availability of such immunizations in the offices of most physicians and at all County Health Departments be publicized by the State Association, and that the Tennessee State Medical Association strongly advocate that all children receive such immunizations as a demonstration of its interest in the public health."

**ACTION: A D O P T E D**

#### RESOLUTION NO. 5

##### Testing for Phenylketonuria in Infants

By: C. D. HAWKES, M.D., Liaison Committee to the Public Health Department

"WHEREAS, the association of severe mental deficiency with the excretion of phenylpyruvic acid in the urine has been recognized since 1934, and

WHEREAS, such phenylketonuria can be treated by diet in the early months of life as a preventative of mental deficiency and neurologic abnormalities, and

WHEREAS, simple tests are available to recognize this metabolic disorder through testing the urine, now therefore be it

RESOLVED, that the House of Delegates of the Tennessee State Medical Association have publicized by the State Association the fact that routine testing of the urine in all infants for phenylketonuria is advisable, thereby acting to prevent mental retardation in those who excrete phenylpyruvic acid, and that the State Association urge its members who have occasion to examine and treat young infants be diligent in carrying out testing for phenylketonuria in every infant."

**ACTION: R E J E C T E D**

REASON: Test has not been completely perfected; possibly would create malprac-

tice suits against physicians; and adoption would open the door to an endless stream of similar resolutions.

#### RESOLUTION NO. 6

##### Establishment of Student Loan Fund

JOHN H. BURKHART, M.D., Chairman  
Youth and Education Committee

"WHEREAS, the decreasing enrollment in medical schools throughout the nation is and should be of concern to all members of the medical profession, and

WHEREAS, there is an increasing need for more physicians to minister to a growing state and national population, and

WHEREAS, the cost to the student of obtaining a medical education is by any standard considerable, and

WHEREAS, in many instances otherwise qualified and interested students are thwarted from becoming physicians because of an inability to finance a medical education,

THEREFORE BE IT RESOLVED, that the House of Delegates of the Tennessee State Medical Association hereby take action to establish a student loan fund to assist medical students in obtaining a medical education, and be it further

RESOLVED, that this fund shall be designated The Tennessee Medical Association Student Loan Fund, and be it further

RESOLVED, that an initial appropriation in an amount to be determined by the TSMA Board of Trustees be allocated to inaugurate this loan fund; that the TSMA Board of Trustees be authorized to supplement the amount of the fund at its discretion; and that the Board of Trustees or its designated committee be authorized to administer the program under the following criteria of applicant eligibility and conditions:

- (1) Resident of Tennessee;
- (2) Attending or accepted as a student at the University of Tennessee, Vanderbilt, or Meharry medical schools;
- (3) Loan may be granted for any or all of the four years during which satisfactory grades are maintained, the acceptance of the student by the school

sufficing as eligibility for the first year under this criterion;

- (4) The maximum amount of the loan granted shall not exceed \$2,000 for the first school year and \$1,000 for each succeeding school year to a maximum total for a recipient of \$5,000;
- (5) The loan shall be repayable at a rate of interest determined by the loan committee, within five (5) years subsequent to the termination of the recipient's formal medical training, with such training being defined as including any internship or residency which the recipient may undertake."

The Reference Committee recommended Resolution No. 6 be referred to the Board of Trustees for appropriate implementation; that such loans to students be restricted to residents of Tennessee, regardless of what school of medicine is attended, provided that the school is Grade A; and that the Board of Trustees make the decision of whether this student loan fund should be funneled through the AMA Student Loan Fund.

**The Reference Committee recommended adoption of Resolution No. 6 with above recommendations.**

**ACTION: A D O P T E D**

#### RESOLUTION NO. 6A

##### Establishment of Student Loan Fund

By: A. ROY TYRER, M.D.

"WHEREAS, the decreasing enrollment in medical schools throughout the nation is and should be of concern to all members of the medical profession, and

WHEREAS, there is an increasing need for more physicians to minister to a growing state and national population, and

WHEREAS, the cost to the student of obtaining a medical education is by any standard considerable, and

WHEREAS, in many instances otherwise qualified and interested students are thwarted from becoming physicians because of an inability to finance a medical education, and

WHEREAS, the machinery for administration of a student loan fund has been set up in the AMA and a similar organization

in TSMA would be a duplication of considerable time, effort, and expense, and

WHEREAS, money for student loans in the AMA fund secures loans for 12 times the amount donated, therefore be it

RESOLVED, that the House of Delegates of the Tennessee State Medical Association take action to approve a student loan fund to assist medical students in obtaining a medical education, and be it further

RESOLVED, that the TSMA Board of Trustees be authorized to allocate funds for this purpose, which funds shall be channeled through the AMA Student Loan Fund for administration and disbursement with instruction that these funds are to be utilized for loans to students who are residents of the State of Tennessee."

Dr. Tyrer recommended that Resolution No. 6A be included as an Amendment to Resolution No. 6.

**ACTION: RESOLUTION NO. 6A PRESENTED AS AN AMENDMENT TO RESOLUTION NO. 6 WAS VOTED UPON AND RESOLUTION NO. 6A AS AN AMENDMENT TO RESOLUTION NO. 6 WAS REJECTED.**

#### RESOLUTION NO. 7

##### Adoption of a Standard Method for the Evaluation of Percentage of Visual Loss and Disability

By: ROLAND H. MEYERS, M.D., Chairman  
Sight Conservation Committee

"WHEREAS, the Tennessee State Medical Association has never adopted a standard method for the evaluation of percentage of visual loss and disability, and

WHEREAS, the Sight Conservation Committee considers that a standard method would be advantageous to the patients, employers, insurance companies, and physicians; now therefore be it

RESOLVED, that the House of Delegates of the Tennessee State Medical Association adopt the method compiled by the Committee on Medical Rating of Physical Impairment, titled *Guides to the Evaluation of Permanent Impairment, the Visual System*, published in *The Journal of the American Medical Association*, September 27, 1958, as



the standard method for evaluating visual loss and disability."

**ACTION: A D O P T E D**

#### RESOLUTION NO. 8

Withdrawal of Persons Addicted to Narcotics  
in U. S.

By: W. O. VAUGHAN, M.D.

"WHEREAS, the American Medical Association and the American Bar Association have had committees studying the problem of narcotic drug addiction, and

WHEREAS, successful and humane withdrawal of individuals addicted to narcotics in the United States necessitates constant control under conditions affording a drug-free environment, and always requires close medical supervision, and

WHEREAS, the successful treatment of narcotic addicts in the United States requires extensive post-withdrawal rehabilitation and other therapeutic services; now therefore be it

RESOLVED, that the House of Delegates of the Tennessee State Medical Association expresses the opinion that maintenance of stable dosage levels in individuals addicted to narcotics is generally inadequate and medically unsound and that ambulatory clinic plans for the withdrawal of narcotics from addicts are likewise generally inadequate and medically unsound; and be it further

RESOLVED, that the Tennessee Delegates to the House of Delegates of the American Medical Association be instructed (a) to oppose the development of such ambulatory treatment plans, and (b) to support (1) after complete withdrawal, follow-up treatment, including that available at rehabilitation centers, (2) measures designed to permit the compulsory civil commitment of drug addicts for treatment in a drug-free environment, (3) the advancement of methods and measures towards rehabilitation of the addict under continuing civil commitment, and (4) the establishment of methods for the dissemination of factual information on narcotic addiction to the members of the medical profession."

**ACTION: A D O P T E D**

#### RESOLUTION NO. 9

Endorsement of the Commissioner of the  
Department of Public Health and the  
Commissioner of the Department of  
Mental Health

By: JOHN R. THOMPSON, JR., M.D.

WHEREAS, the next regular meeting of the House of Delegates of the Tennessee State Medical Association will be in April of 1963, and

WHEREAS, by the time of our next regular meeting there will have been inaugurated in Tennessee a new Governor of the State of Tennessee, and

WHEREAS, it will be the responsibility of this new Governor to appoint Commissioners of the Department of Public Health and the Department of Mental Health, and

WHEREAS, the incumbents of these two offices, Dr. R. H. Hutcheson and Dr. Joseph J. Baker, have rendered efficient services in the respective Departments, now therefore be it

RESOLVED, that the Tennessee State Medical Association assembled in regular session in Memphis, Tennessee, on April 8, 1962, wishes to express to the Governor-elect the Tennessee State Medical Association's confidence in Dr. R. H. Hutcheson, Commissioner of the Department of Public Health, and Dr. Joseph J. Baker, Commissioner of the Department of Mental Health, and request that the Governor give every possible consideration to the reappointment of Dr. R. H. Hutcheson and Dr. Joseph J. Baker with the full assurance from this Association that these two men will have our support and cooperation in the discharge of their official duties."

#### NO ACTION TAKEN

REASON: Would set a precedent and lead to future introduction of similar resolutions. Because of language in Section 53-102, Tennessee Code Annotated, such endorsement would not necessarily be germane to the deliberations of the House of Delegates.

#### RESOLUTION NO. 10

National Blue Shield Senior Citizens Plan

By: JAMES A. KIRTLEY, JR., M.D., Chairman  
Committee on Prepaid Health Insurance

"WHEREAS, the Prepaid Health Insur-

ance Committee of the Tennessee State Medical Association recommended to this House, in 1961, a Senior Citizens Plan of Health Insurance, and

WHEREAS, this House of Delegates, in its 1961 session, did approve a plan with a fee schedule of 25% less than the existing Tennessee Plan, provided premium rates would be correspondingly reduced by the underwriters, and

WHEREAS, since the underwriters could not agree to the conditions of selling the plan proposed, the Prepaid Health Insurance Committee has continued to try and develop a plan for our senior citizens, and

WHEREAS, the American Medical Association and the National Blue Shield have jointly recommended a health insurance plan called the National Blue Shield Senior Citizens Plan, covering single persons over 65 years of age with income not exceeding \$2500 per year, and married persons over 65 years old with a total income not exceeding \$4,000 per year, and

WHEREAS, the National Blue Shield, through its affiliate plan in Tennessee, The Tennessee Hospital Service Association, has presented to TSMA the plan and fee schedule for senior citizens in Tennessee, and is requesting that the Tennessee State Medical Association approve the plan since it is a uniform national plan being offered throughout the United States, and

WHEREAS, the Prepaid Health Insurance Committee finds there are some undesirable inequities in the proposed plan, (1) especially in in-hospital medical care, and (2) the Tennessee State Medical Association has had no voice in the development of the fee schedule or other conditions, and

WHEREAS, the Prepaid Health Insurance Committee has carefully studied the proposal and although there are facets of the plan which are not desirable, the Committee believes this is the best proposal thus far submitted, and

WHEREAS, the Tennessee State Medical Association recognizes an existing need for satisfactory medical and surgical coverage for its senior citizens, and

WHEREAS, it feels that in a free economy competition is essential to achieve the best results, now therefore be it

RESOLVED, that the TSMA House of

Delegates approve the recommendation of the Prepaid Health Insurance Committee to accept the National Blue Shield Senior Citizens Plan, with the provision that the experience of this plan be presented to the Prepaid Health Insurance Committee of TSMA by March 1, 1963, for further study and consideration, and be it further

RESOLVED, that the program in Tennessee shall be known as the Tennessee Senior Citizens Plan, and that doctors of medicine in Tennessee be asked to become participating physicians in the plan, which will be separate and apart from the existing Tennessee Plan, and be it further

RESOLVED, that the House of Delegates of the Tennessee State Medical Association strongly encourage insurance carriers to develop and offer appropriate plans for the care of elderly Tennesseans of low economic status, and be it further

RESOLVED, that the Prepaid Insurance Committee is hereby instructed to set up a plan to be known as the Tennessee Senior Citizens Plan. This plan is to have provisions that are the same as or better than the National Blue Shield Senior Citizens plan. Any such plan proposed by an insurance carrier is to be submitted to the Committee and accepted or rejected in the same fashion now used for the Tennessee Plan. Any carrier selling such a plan shall be expected to report on experience with the plan in Tennessee on March 1, 1963."

#### RESOLUTION NO. 10A

##### Tennessee Senior Citizens Prepaid Medical Insurance Plans

By: Reference Committee on Resolutions

"WHEREAS, the Tennessee State Medical Association recognizes an existing need for satisfactory medical and surgical coverage for its senior citizens, and

WHEREAS, it feels that in a free economy competition is essential to achieve the best results, now therefore be it

RESOLVED, that the House of Delegates of the Tennessee State Medical Association strongly encourage insurance carriers to develop and offer appropriate plans for the care of elderly Tennesseans of low economic status."

Dr. Chas. C. Trabue moved to have Reso-



lution No. 10A serve as an amendment to Resolution 10, rather than a separate resolution.

These resolutions resulted in lengthy debate and discussion on the floor of the House. There were numerous amendments and clarifications made, after which, the final action taken was the **adoption of Resolution No. 10 as it appears above.** Resolution No. 10, as above, contains all of the amendments and is the all-inclusive resolution approved by the House of Delegates on the insurance plan for senior citizens.

**ACTION: ADOPTED**

#### RESOLUTION NO. 11

**RESOLUTION to AMA House on National Blue Shield Plan for Senior Citizens**

By: JAMES A. KIRTLEY, JR., M.D., Chairman  
Committee on Prepaid Health Insurance

"WHEREAS, the American Medical Association and the National Blue Shield have jointly recommended a health insurance plan, known as the National Blue Shield Senior Citizens Plan, for persons over 65 years of age, and

WHEREAS, the Tennessee State Medical Association has found some phases of the plan to which it objects, particularly the fees and services offered for in-hospital medical care pertaining to consultations and medical history, plus the fact that the respective state medical associations have had no voice in the development of the fee schedule or other conditions of the plan, now therefore be it

RESOLVED, that delegates of the Tennessee State Medical Association to the American Medical Association be instructed to introduce a resolution in the House of Delegates of the AMA, requiring that the American Medical Association use its influence at the national level to have the fee schedule for the National Blue Shield Senior Citizens Plan be negotiated on the state level, based on the actuarial experience, and further that some leeway be given to the State Medical Associations in developing the plan in the respective states."

**ACTION: ADOPTED**

#### RESOLUTION NO. 12

**Commendation to Dr. Thomas F. Frist for Outstanding Work As Consultant to the American Medical Association's Committee on Aging**

By: W. O. VAUGHAN, M.D., President

"WHEREAS, the American Medical Association has brought to the attention of the Tennessee State Medical Association the outstanding service performed by Dr. Thomas F. Frist, Nashville, as a consultant to the Council on Medical Service and the Committee on Aging of the AMA, and

WHEREAS, Dr. Frist has given unselfishly of his time and talents in working for the profession to the extent that his contribution has been given official recognition by the American Medical Association, now therefore be it

RESOLVED, that the House of Delegates of the Tennessee State Medical Association recognize Dr. Frist's services and through this resolution extend to him the official appreciation of the membership of the Tennessee State Medical Association."

#### NO ACTION TAKEN

REASON: It was believed that the Association is replete with distinguished physicians who have contributed equally of their time, talents, and efforts and to single out one outstanding doctor would do an injustice to many others, and set a precedent for the introduction of numerous similar resolutions in the future.

#### RESOLUTION NO. 13

**Support of Existing Programs for the Medical Care of the Aged and Continued Opposition to King-type Legislation**

By: DOUGLAS H. RIDDELL, M.D., Chairman  
Legislative and Public Policy Committee

"WHEREAS, the members of the Tennessee State Medical Association have traditionally made available their services to persons of all age groups, regardless of ability to pay for such services; and

WHEREAS, the Tennessee State Medical Association has and will continue to foster and support those health care programs

which are in keeping with the profession's objective of maintaining high standards of medical care; and

WHEREAS, the medical profession in Tennessee has, through its vigorous support of the Kerr-Mills Act and the Medical Assistance for the Aged Program, demonstrated its keen and active interest in assuring that elderly persons are provided necessary health care; and

WHEREAS, there is pending in the Congress the King Bill (HR 4222) which would create a compulsory health care program for the aged, financed through increased social security taxes; and

WHEREAS, such legislation as the King Bill would establish the mechanism which could be expanded to create a compulsory health care program of socialized medicine for persons of all age groups; now,

THEREFORE BE IT RESOLVED, that the Tennessee State Medical Association reaffirm its support of the Kerr-Mills Act and the Medical Assistance for the Aged program; and be it further

RESOLVED, that the Tennessee State Medical Association continue its opposition to the King Bill and any similar legislation."

**ACTION: ADOPTED**

#### RESOLUTION NO. 14

Sponsorship by the Association of a Conference on Mental Health in Cooperation with the Tennessee Mental Health Association and the Mental Health Committee of the Woman's Auxiliary of TSMA

By: FRANK H. LUTON, M.D., Chairman  
Committee on Mental Health

"WHEREAS, mental illness is a health problem of great magnitude and one that is accepted by all as a medical problem, and

WHEREAS, the Joint Commission on Mental Illness and Health has completed a five (5) year study of the problem in this country and has issued a report which undoubtedly will have a profound influence on planning and development of programs for mental health in the years to come, and

WHEREAS, the Board of Trustees of the AMA voted to recognize the report of the Joint Commission as an 'historical contribution to the promotion and care of mental illness' and that it be considered as the basis

for a program which the American Medical Association can endorse and support, and

WHEREAS, the House of Delegates of the American Medical Association authorized the Council on Mental Health of the AMA to conduct a National Congress on Mental Health in Chicago in October, 1962, at which time studies will be made to initiate programs between physicians and lay people at the local level, and

WHEREAS, the Committee on Mental Health of the TSMA has recommended that there be conducted in 1963 a Conference on Mental Health that will be jointly sponsored by the TSMA, the Tennessee Mental Health Association and the Woman's Auxiliary of the TSMA, now therefore be it

RESOLVED, that the TSMA through its recognition of the need for such a conference as is recommended by its Committee on Mental Health will extend its support to these recommendations, and be it further

RESOLVED, that a planning committee for such a Conference be named. This Committee should be composed of the President of the TSMA and such other members as he feels will give broad representation of both medical and lay groups. This Planning Committee would begin its meetings soon after its formation."

**ACTION: ADOPTED**

#### RESOLUTION NO. 15

Support by the Association of a Request by the Tennessee Department of Mental Health to the Next Legislature for an Appropriation Which Will Provide for the Establishment of an Eight (8) Hour Day for Attendants Within Its Hospitals

By: FRANK H. LUTON, M.D., Chairman  
Committee on Mental Health

"WHEREAS, the Tennessee State Medical Association has advocated a close liaison between its Mental Health Committee and the Tennessee Department of Mental Health, and

WHEREAS, this liaison has produced a greater awareness of the problems involved in providing hospital treatment and rehabilitation for large numbers of mentally ill patients, and

WHEREAS, a problem urgently requiring correction is the traditional twelve-hour



working day for attendants in Tennessee's large mental hospitals, and

WHEREAS, this creates difficulties in employing personnel and produces morale problems arising out of inequities in the work load and prevents the fullest integration of the hospital's treatment program, now therefore be it

RESOLVED, that the next Legislature be urged by this body to provide sufficient operating funds to the Tennessee Department of Mental Health to correct this problem without curtailing the development of other current mental health programs."

**ACTION: A D O P T E D**

#### RESOLUTION NO. 16

##### Use of Animals in Research

By: ADDISON B. SCOVILLE, JR., M.D.

"WHEREAS, two bills are before the Congress of the United States proposing to limit, license and police scientific research requiring study of animals, these bills being known as the Moulder (HR 3556) and Griffiths (HR 1937), Bills, and

WHEREAS, the ostensible purpose of the Moulder and Griffiths Bills is to assure humane treatment of laboratory animals, and

WHEREAS, neither bill makes any provision for the advancement of the science and art of animal care, no provision for training in laboratory animal care, no provision for the interchange of information on laboratory animal care, and no provision for better facilities for laboratory animal care, and

WHEREAS, both bills are promoted by persons long prominent in antivivisectionist efforts to sabotage research requiring animals, now therefore be it

RESOLVED, by the Tennessee State Medical Association that the Moulder and Griffiths Bills be cited as insincere proposals aimed not at the perfection of animal research but rather at the encumbrance of such research, and be it further

RESOLVED, that the House of Delegates of the American Medical Association urges the Congress to think in terms of help for the advancement of humane animal studies and not obstruction of progress in agriculture, medicine and wildlife conservation."

**ACTION: A D O P T E D**

#### RESOLUTION NO. 17

##### Commendation and Active Support of the American Medical Association

By: ALVIN J. INGRAM, M.D.  
Memphis-Shelby County Society

"WHEREAS, the American Medical Association deserves the effective support of all constituent medical associations, and each individual member, and

WHEREAS, the A.M.A. is the national voice of Medicine in scientific, educational, socio-economic, legislative and numerous other activities vital to the private enterprise system of Medicine, and

WHEREAS, doctors of medicine and particularly their national association are and have been continually under attack from many sources, now therefore be it

RESOLVED, that through the adoption of this Resolution by the House of Delegates of the Tennessee State Medical Association, this Association actively supports and commends the American Medical Association for its vital program in all areas of medical care, particularly its efforts in legislation to reject the King-Anderson Bill (H.R. 4222), and other similar legislation which would place medical care for the aged under the Social Security system, and be it further

RESOLVED, that physician members of A.M.A. from Tennessee, thoroughly inform themselves through every available medium of the program and projects now being activated through the American Medical Association, and give their support in order that Medicine can strongly present its program nationally and internationally."

**ACTION: A D O P T E D**

#### RESOLUTION NO. 18

##### Relationship Between Doctors of Medicine and Doctors of Osteopathy

By: The Council of TSMA

"WHEREAS, the action taken by the American Medical Association at its New York City meeting in June, 1961, places the responsibility for defining relationships between Doctors of Medicine and Doctors of Osteopathy on the state and local medical society, and is quoted:

"It is appropriate for the American Medi-

cal Association to reappraise its application of policy regarding relationships with doctors of osteopathy in view of the transition of osteopathy into osteopathic medicine, in view of the fact that the colleges of osteopathy have modeled their curricula after medical schools, in view of the almost complete lack of osteopathic literature and the reliance of osteopaths on and use of medical literature, and in view of the fact that many doctors of osteopathy are no longer practicing osteopathy. Policy should now be applied individually or at state level according to the facts as they exist. Heretofore, this policy has been applied collectively at national level. The test now should be: Does the individual doctor of osteopathy practice osteopathy, or does he in fact practice a method of healing founded on a scientific basis? If he practices osteopathy, he practices a cult system of healing and all voluntary professional associations with him are unethical. If he bases his practice on the same scientific principles as those adhered to by members of the American Medical Association, voluntary professional relationships with him should not be deemed unethical, and

WHEREAS, under the laws of Tennessee in reference to the healing arts, Doctors of Osteopathy are licensed to practice medicine in all its branches just as are Doctors of Medicine, and have been so licensed since the year 1915, and are now required to pass the same basic science examination, and

WHEREAS, no persons other than Doctors of Medicine and Doctors of Osteopathy are so licensed to practice medicine in all its branches in Tennessee, now therefore be it

RESOLVED, that it be ethical now in Tennessee for a Doctor of Medicine to consult professionally with a Doctor of Osteopathy licensed to practice medicine in the State of Tennessee if that Doctor of Osteopathy is in fact practicing scientific medicine, and be it further

RESOLVED, that the determination as to whether a Doctor of Osteopathy in Tennessee is practicing scientific medicine will require an official opinion of the local county medical society. In all instances of emergency or where the welfare of a patient

necessitates immediate decision, or in the absence of informed opinions officially arrived at by the local county medical society, the Doctor of Medicine shall make such decisions without necessarily seeking advance approval from any medical society."

**ACTION: ADOPTED**

#### RESOLUTION NO. 19

**Society Reports to the Council**

By: The Council of TSMA

"WHEREAS, annual reports are not received from all county medical societies by the councilors for their annual report to the House of Delegates, now therefore be it

RESOLVED, that where the councilor report has not been received from a local medical society by the deadline of February 15th in the year in which the House of Delegates meets, the delegate from that county medical society shall not be seated."

**NO ACTION TAKEN**

REASON: This was referred to the Reference Committee on Amendments since the Resolution would require an amendment to the By-Laws of the Association.

#### RESOLUTION NO. 20

**Medical Assistance to the Aged Program**

By: CHARLES C. TRABUE, IV, M.D.

"WHEREAS, the program of Medical Assistance to the Aged under the provisions of the Kerr-Mills Law has been utilized less than three percent of expected utilization, and

WHEREAS, this lack of utilization has been due either to (a) lack of public awareness of the availability of the program, (b) too restrictive rules of eligibility, or (c) exaggeration of actual needs for such service in the over-all availability of medical care within the State by federal proponents of the King-Anderson type of legislation, now therefore be it

RESOLVED, that each physician in the State be requested to be vigilant in his awareness of the broadening scope of the Medical Assistance to the Aged Program and that he be requested to make full use of its benefits in behalf of his patients and further be it

RESOLVED, that every effort be made to encourage the Department of Public Wel-



fare to broaden the scope of the Medical Assistance to the Aged Program to include (a) neoplastic disease when treatable with reasonable hopes of success; (b) increased length of hospitalization when the patient's needs exceed the present ten day limit of hospitalization; and (c) consideration of adding convalescent and/or nursing home care, and further be it

**RESOLVED**, that the Department of Public Welfare be actively encouraged to re-study the possible broadening of the base of eligibility, and be it further

**RESOLVED**, that further publicity be given to this program, both to the public as well as to the prospective recipients of the program, with information as to eligibility and how certification can be sought.

**ACTION: ADOPTED**

**The Report of the Reference Committee on Resolutions was adopted as a whole as amended by action of the House of Delegates.**

#### Visiting Guests

The Speaker introduced Dr. Sylvester Thorn, Houston, Texas, fraternal delegate from the Texas Medical Association.

#### Report of Reference Committee on Reports of Officers

G. BAKER HUBBARD, M.D., Chairman

#### Report of the President

The Reference Committee reviewed the report of the President, Dr. W. O. Vaughan, Nashville, and extended commendation and thanks to him for his excellent work during his term of office.

The Committee recognized the leadership of Dr. Vaughan and commented upon his remarks dealing with communications and urged the membership of the Association to continue to be alert, active and organized. The Committee took note that the President admonished physicians to maintain their position and dedication to the care of the sick as well as their interest in public, scientific and legislative affairs. The Reference Committee also commended Dr. Vaughan and the State Association on participation in the Regional White House Conference. The Committee urged that Dr. Vaughan's report be expedited with in-

creased efforts to see that the Kerr-Mills Law is quickly implemented and enlarged. It was stated that the entire thought of the President in his report was for the improvement of the care of sick people and it was felt by the Reference Committee that this fact should be widely publicized in the press. The Committee restated the words of the President wherein today's task requires more than good performance in the daily rendering of medical care by physicians in order to protect against persistent criticism and attack.

The Committee expressed the appreciation of the entire membership of the Tennessee State Medical Association to Dr. Vaughan for his capable leadership, and moved the adoption of the report.

**ACTION: ADOPTED**

#### Report of Secretary-Editor

Appreciation was extended to Dr. R. H. Kampmeier and his assistant Editors, Drs. Addison B. Scoville and Albert Weinstein. The Committee stated that one of the most important facets of our Association is communication and it is difficult to see how it could have been better presented than by the Editor through the JOURNAL. Members were urged to read editorials and the yellow pages in the JOURNAL, where they would be advised of the activities of physicians and the Association.

The Reference Committee moved the adoption of this report.

**ACTION: ADOPTED**

#### Report of the Chairman of Board of Trustees and Treasurer

The Committee reviewed the report of Dr. R. M. Finks, Chairman and Treasurer, and it was stated that the Committee was aware and appreciative of the great amount of work undertaken by the Board during the year. In addition to the quarterly meetings the Executive Committee was active in handling routine administrative affairs. The Committee pointed out that not many members realized the amount of work that is transacted by the Board and the Committee was amazed at the volume of work accomplished.

The Committee urged that efforts be intensified to obtain additional participating

physicians in the Tennessee Plan. The Committee noted the activity of the American Medical Political Action Committee (AMPAC). It was stated that the formation of an AMPAC Committee in Tennessee was imperative. The Board of Trustees was commended by the Reference Committee wherein it recommended that a voluntary organization separate and apart from TSMA be created and the Committee further commended and endorsed the voluntary AMPAC type organization.

The Board of Trustees was commended for its consistent work and leadership, together with the advance planning for the future on a long-range basis.

After reviewing the Treasurer's report, the Committee noted with satisfaction that the Association is operating on a sound financial basis.

The Reference Committee moved the adoption of this report.

**ACTION: ADOPTED**

#### Report of the Council

The Reference Committee had received the report of the Chairman of the Council, Dr. Frank Moore. The Committee encouraged a well organized plan that will be adopted to deal with osteopaths and stated that it was the hope of the Committee that such be accomplished at this meeting. The Reference Committee urged that the Council try to obtain in the publication of physicians in Tennessee whether or not the listed physicians were members of their county or state medical society and also the specialty of each Tennessee doctor.

The Reference Committee urged that the Legislative Committee consider some method for dealing with licensed physicians who do not belong to the local, state or national organization.

The Reference Committee commended the Council and moved adoption of this report.

**ACTION: ADOPTED**

#### Report of the Executive Director

The Reference Committee stated that it had reviewed the report of the Executive Director and pointed out that it was revealing and outstanding. The Committee commended the format of the report and encouraged the Executive Director to fol-

low this type of presentation in the future. The Committee stated that the report could be scanned in five minutes and one could obtain a good working knowledge of what is being done. Also, it was stated that an hour could be spent and one could be well indoctrinated with the facets of the state organization. The Reference Committee recommended that the annual report of the Executive Director be published in the JOURNAL of the Tennessee State Medical Association. The Executive Director was commended for his appointment on the Advisory Committee to the Communications Division of the AMA.

The Reference Committee recommended adoption of this report.

**ACTION: ADOPTED**

**The report of the Reference Committee on Reports of Officers was adopted as a whole.**

The Speaker announced that the next order of business would be to hear the Report of the Reference Committee on Reports of Standing Committees.

#### Report of Reference Committee on Reports of Standing Committees

A. ROY TYRER, M.D., Chairman

The Reference Committee moved the adoption of reports of the following committees:

Committee on Scientific Work

Committee on Hospitals

Committee on Legislation and Public Policy

Liaison Committee to the Public Health Department (Adopted with commendation)

Committee on Postgraduate Education (Reference Committee made a number of recommendations and further that the final decision on the Committee's activities rest with the Board of Trustees.)

Committee on Memoirs

Committee on Prepaid Health Insurance Advisory Committee to State Department of Public Welfare

Public Service Committee

Grievance Committee (Adopted with commendation)

Rural Health Committee



(Adopted with addendum comments by Reference Committee)

Committee on Tennessee Medical Foundation

Reports were not rendered by the Committee on Insurance and the Committee on Cancer.

**The Report of the Reference Committee on Reports of Standing Committees was adopted as a whole.**

The next order of business was the Report of the Reference Committee on Reports of Special Committees.

**Report of Reference Committee on Reports of Special Committees**

M. F. LANGSTON, M.D., Chairman

The Reference Committee recommended that the following special reports be adopted.

Committee on Disaster Planning

(Adopted with modifications which did not affect the intent of the report. The Reference Committee commended the Committee and Chairman for the time consuming and constructive work.)

Committee on Occupational Health

(Adopted with commendation)

Liaison Committee to United Mine Workers of America

Advisory Committee to Woman's Auxiliary (Adopted with commendation)

Committee on Mental Health

Health Project Contest Committee

(Recommended adoption and further that the Committee be placed on a stand-by status for a complete review of the program as directed in the report.)

Sight Conservation Committee

Tennessee Committee for American Medical Education Foundation

Committee on Youth and Education

**(Special Reports)**

Annual Report of Woman's Auxiliary to TSMA (Commended as an excellent report and urged a standing vote of appreciation and confidence.)

Report of AMA Delegation

There were no reports from the following special committees:

Committee on Blood Banks

Committee on Governmental Medical Services

Committee on Tuberculosis

Committee on Legal Relations and Inter-professional Code

General Liaison Committee

Following the Report of the Reference Committee on Special Committees and Special Reports, **the Report of the Reference Committee on Reports of Special Committees was adopted as a whole.**

Dr. C. B. Roberts made a motion that the House should give a standing vote of appreciation for the four years of service of the Speaker of the House, Dr. Joseph W. Johnson, Jr. who was retiring as Speaker. (Members arose and applauded.)

**Meeting in 1963**

The Speaker stated that the 1963 Annual Meeting had been scheduled to be held in Nashville.

Dr. W. O. Vaughan stated that the conditions for housing in Nashville had been greatly changed since the year before inasmuch as the Maxwell House Hotel had burned and the new auditorium being constructed would not likely be completed for the 1963 meeting. He suggested that the meeting be held elsewhere and that it be scheduled for Nashville in 1964.

Dr. Richard C. Sexton, Knoxville, invited the Association to conduct its 1963 meeting in Knoxville and pledged a hospitable environment for those that planned to attend the meeting.

The House of Delegates voted to conduct the 1963 Annual Meeting in Knoxville.

**Meeting in 1964**

Dr. R. M. Finks, Nashville, requested the House to accept an invitation to meet in Nashville in 1964. He stated that he trusted that necessary facilities would be completed by that date. The invitation was accepted by the House to hold the annual meeting in Nashville in 1964.

The retiring Speaker of the House, Dr. Johnson, recognized Dr. J. Malcolm Aste, new Speaker of the House and wished him God speed in his tenure as Speaker for the coming year.

The Speaker expressed his appreciation

for the fine participation and support of members of the House in his tenure as Speaker.

The Speaker called for any other new business to be presented. There being none,

the House of Delegates of the Tennessee State Medical Association adjourned at 12:00 Noon sine die.

J. E. BALLENTINE  
Executive Director

## Abstract of Minutes of Council Meetings Tennessee State Medical Association Peabody Hotel—Memphis—April 8-9, 1962

The Council of the Tennessee State Medical Association convened at 10:00 a.m., Sunday, April 8, 1962 in the Peabody Hotel, Memphis, with the Chairman, Dr. Frank Moore, Jackson, presiding.

### **Councilors present were:**

Frank Moore, Jackson, Chairman—Eighth District

Laurence A. Grossman, Nashville—Sixth District

Donald H. Bradley, Sparta—Third District

R. David Taylor, Dyersburg—Ninth District

J. O. Hale, Johnson City—First District

Wm. K. Owen, Pulaski—Seventh District

The Chairman called the meeting to order for the purpose of receiving a report from Dr. Grossman, chairman of a study committee on relationships between osteopaths and physicians.

Highlights of the report were as follows:

1. That under the laws of Tennessee in reference to the healing arts, Doctors of Osteopathy are licensed to practice medicine in all its branches just as are Doctors of Medicine, that they have been so licensed since the year 1915, and are now required to pass the same basic science examination.

2. That no persons other than Doctors of Medicine and Doctors of Osteopathy are so licensed to practice medicine in all its branches in Tennessee.

3. That, as a result of actions taken by the American Medical Association at its annual meeting in New York in June, 1961, it was determined to be ethical for a Doctor of Medicine to consult professionally with a Doctor of Osteopathy, provided the State Medical Association so determined. The osteopath licensed to practice in a respec-

tive state and who is practicing scientific medicine, could be determined to be ethical by the State Medical Association and consultations with physicians could be ethical.

4. That the determination as to whether a Doctor of Osteopathy in Tennessee is practicing scientific medicine will on occasion require an official opinion of the local county medical society. In all instances of emergency or where the welfare of a patient necessitates immediate decision, or in the absence of informed opinions officially arrived at by the local county medical society, the Doctor of Medicine shall make such decisions without necessarily seeking advance approval from any medical society.

Following the report, the Council approved that a resolution be presented to the House of Delegates containing the intent of the report of the study committee on relationships between osteopaths and physicians.

A motion adopted by the Council, that a resolution be presented to the House of Delegates concerning the reports of individual county medical societies.

A lengthy discussion ensued concerning the problems of local districts by Dr. Hale and Dr. Cole. A motion was presented and adopted that county society grievance committees send reports directly to the Councilor of the district involved when the question of a grievance on medical ethics was brought to their attention.

In further action, the Council requested that the Legislative Committee and the House of Delegates study the conflicting interests of the Board of Healing Arts and the Medical Examiners Board to facilitate the work of both of these groups.



There being no further business, the Council adjourned.

Respectfully submitted,  
WM. K. OWEN, M.D., Secretary

Meeting of the Council  
April 9, 1962

The Council of the Tennessee State Medical Association met at 12:00 Noon in the Peabody Hotel, Memphis, April 9, 1962.

**Council members present were:**

Frank Moore, Jackson, Chairman—Eighth District  
Francis Cole, Memphis—Tenth District  
M. F. Langston, Chattanooga—Third District  
J. O. Hale, Johnson City—First District  
Laurence A. Grossman, Nashville—Sixth District  
R. David Taylor, Dyersburg—Ninth District  
Wm. K. Owen, Pulaski—Seventh District  
The meeting of the Council was called to

order by the Chairman and members heard a lengthy report concerning the Blount County Hospital matter. The Council discussed projected business for the year and voted that the Chairman obtain from the Executive Director the amount of funds available for the Council to carry on its work during the 1962-63 year.

The Chairman appointed Dr. Francis Cole, Dr. J. O. Hale and Dr. R. David Taylor, as a study committee concerning the corporate practice of medicine as regards radiologists, anesthesiologists and pathologists, as well as other practitioners of the state who might become involved in corporate practice in the State of Tennessee. The Committee is to study the fees of these individuals and their contracts when such fees are based on percentages.

Dr. Frank Moore was re-elected Chairman of the Council and Dr. Wm. K. Owen re-elected secretary.

Respectfully submitted,  
WM. K. OWEN, M.D., Secretary

## Minutes of the Second Quarter Meeting of the Board of Trustees, Tennessee State Medical Association, Peabody Hotel, Memphis, Tennessee, Wednesday, April 11, 1962—9:00 A.M.

The Board of Trustees of the Tennessee State Medical Association convened for the regular second quarter meeting following the TSMA annual meeting. The meeting began at 9:00 a.m., April 11, 1962, in the Peabody Hotel at Memphis, Tennessee.

**Members of the Board present were:**

Robert M. Finks, M.D., Nashville, Chairman  
J. Malcolm Aste, M.D., Memphis  
G. H. Berryhill, M.D., Jackson  
John H. Burkhart, M.D., Knoxville  
Bland W. Cannon, M.D., Memphis  
Carl C. Gardner, Jr., M.D., Columbia  
Henry B. Gotten, M.D., Memphis  
Joseph W. Johnson, Jr., M.D., Chattanooga  
Wm. J. Sheridan, M.D., Chattanooga  
W. O. Vaughan, M.D., Nashville  
**Members of the Board absent were:**  
R. H. Kampmeier, M.D., Nashville

**Others present were:**

Mr. J. E. Ballentine, Executive Director, TSMA, Nashville  
Mr. Jack Drake, Public Service Director, TSMA, Nashville  
Mr. C. P. Maguire, Administrative Assistant, TSMA, Nashville

The meeting of the Board of Trustees was called to order at 9:00 a.m. by Dr. R. M. Finks, Chairman.

**I. OLD BUSINESS:**

(A) A motion was made by Dr. Burkhart, seconded by Dr. Johnson, that the Board approve the minutes of the January 13th and 14th, 1962, meeting as recorded and mailed to members of the Board. **The motion was approved.**

(B) A motion was made by Dr. Vaughan, seconded by Dr. Burkhart, that Dr. Robert M. Finks be named Chairman of the Board of Trustees, and Treasurer. **Dr. Finks was**

**unanimously elected.** Dr. Carl C. Gardner, Jr., Columbia, **was unanimously elected vice-chairman of the Board.**

A motion was presented to name the three Nashville members of the Board, one member from East Tennessee, and one member from West Tennessee, to compose the Executive Committee. **This motion was adopted.** A motion was made and seconded, that Dr. John H. Burkhardt, Knoxville, and Dr. Bland W. Cannon, Memphis, be named as members of the Executive Committee. **The motion was adopted.** The Executive Committee now consists of: Drs. Robert M. Finks, W. O. Vaughan and R. H. Kampmeier of Nashville; Dr. John H. Burkhardt, Knoxville; and Dr. Bland W. Cannon, Memphis.

A motion was made, seconded **and adopted**, that members of the Research and Long-Range Planning Committee of the Board be composed of Dr. John H. Burkhardt, Chairman; Dr. William J. Sheridan, Dr. Henry B. Gotten, and Dr. R. H. Kampmeier.

The Finance Committee of the Board was elected to consist of Dr. R. M. Finks, Nashville, Chairman; Dr. W. O. Vaughan, Nashville; and Dr. Joseph W. Johnson, Jr., Chattanooga.

(C) The Board of Trustees completed the appointments of the **Standing and Special Committees** of the Association for the year 1962-63.

(D) The Board determined that it was not necessary to appoint a Special Committee on Aging since matters dealing with problems of the aged were being handled through a sub-committee of the Public Service Committee.

(E) The Board considered the formation of a Liaison Committee from TSMA to the University of Tennessee College of Medicine. This matter was presented by Dr. Bland W. Cannon. He outlined a letter that he had received requesting such a committee from Dr. M. K. Callison, Dean of the University of Tennessee College of Medicine. Dr. Cannon reported that he and Dr. Vaughan had discussed this matter personally with Dr. Callison, and the Vice-President of the University of Tennessee Medical Units. Dr. Cannon outlined what

a liaison committee to the University of Tennessee might accomplish.

Dr. Cannon made a motion that the Board of Trustees appoint a committee to meet with the Vice-President of the University of Tennessee College of Medicine and the deans of all medical schools in Tennessee, to work out details of establishing a liaison committee that might take in relationships with all of the medical schools in the State, and report at the next meeting of the Board. The motion was seconded by Dr. Aste, **and the motion was approved.**

It was moved that Dr. Cannon serve as Chairman of this Committee and further that the President of the Tennessee State Medical Association write a letter to Dr. Callison with copies to the Deans of the two other medical schools in Tennessee, and a copy to the Vice-President of the University of Tennessee Medical Units, requesting the Deans of the medical schools in Tennessee and the Vice-President of the UT Medical Units, to meet with the Committee of the Board for the purpose of establishing a permanent "Committee on Medical Education" or some similarly described committee to be determined by the Board of Trustees of TSMA. This motion was made by Dr. Aste, seconded by Dr. Gotten, **and the motion was approved.**

(F) The Board reconsidered a matter held over from the last meeting wherein the Trustees were requested by the Tennessee League of Nursing for a contribution of \$150 toward the printing of a brochure on Nursing Careers. In view of the fact that such a brochure has not been received and no further communication relative to this matter, the Board decided that no further action was necessary.

## II. NEW BUSINESS:

1. The Board of Trustees took up Resolution No. 6, referred by the House of Delegates, pertaining to recommendations by the House for the establishment of a TSMA student loan fund. It was the opinion of the Board that sufficient information did not exist to establish the fund at this time. A motion was made by Dr. Johnson and seconded, "that the TSMA Committee on Youth and Education study all of the details relating to such a program, particularly the functioning of the American Medical Asso-



ciation's loan fund through the American Medical Education and Research Foundation, in order to determine the best method for a loan fund and where the maximum funds could be obtained." **The motion was approved.** Dr. John H. Burkhart, Chairman of the Youth and Education Committee was directed by the Board to make a complete study and report to the Board at its next meeting.

2. Resolution No. 14, adopted by the House of Delegates, called for the appointment of a Planning Committee for a State-wide Mental Health Conference in 1962. The Board of Trustees referred this matter to the President of the Association, since the resolution called for the President to be active in the formation and work of such a committee.

3. The Board discussed the recommendations contained in Report No. 6, pertaining to the Committee on Postgraduate Education. The report to the House of Delegates requested that the Committee be placed on a stand-by basis, however, this was not concurred in by the Reference Committee of the House and the matter was referred to the Board for action.

It was the decision of the Board that the Committee on Postgraduate Education, and the new committee on Disaster Planning meet and work out the details of presenting a program on medical aspects of civil defense, as previously directed, giving both committees the opportunity to discuss a program to be presented throughout the State, and to make a final report pertaining to this activity at the next quarterly meeting of the Board of Trustees. Since the Committee on Postgraduate Education is a Standing Committee, it cannot be abolished without an amendment to the By-Laws and the Board determined that the committee should be continued during the next year.

4. The Board discussed the Reference Committee's recommendations to the House of Delegates on the Report of the Health Project Contest Committee. The report called for placing this committee on a stand-by basis and for a study to be made of the entire activities of the health project contest. The Reference Committee of the House concurred in the recommendation that the committee be placed on a stand-by

status pending a complete review of the program.

The action of the Board resulted in the appointment of Dr. Lawrence Cohen of Memphis to serve as Chairman, and directed that the committee meet and study the activities of the program and submit a recommendation to the Board of Trustees by August 1, 1962.

5. A letter addressed to Dr. Chas. C. Smeltzer, Delegate to the AMA from Tennessee, was presented from a delegate from the South Carolina Medical Association requesting TSMA to participate in a joint hospitality room for the benefit of the delegates at the annual meeting of the American Medical Association. The southern states of Alabama, Georgia, North Carolina, Virginia, Tennessee and South Carolina will compose the states to sponsor a hospitality room at the AMA meeting. It was estimated that \$200 would cover Tennessee's cost in this joint project. Since enough funds are contained in the expense budgeted for AMA Delegates to cover this request, the Board approved the request for the Tennessee State Medical Association to participate in this project with the other state associations named above.

6. Mr. Ballentine read a letter from Eli Lilly and Company wherein a grant of \$300 was offered to the Association for an honorarium to an outstanding guest speaker at the annual meeting.

The Board discussed the proposed grant and felt that TSMA should **not** accept this offer, and directed Mr. Ballentine to write a tactful letter of thanks declining the grant.

7. A letter was read by Mr. Ballentine from the Chairman of the TSMA Committee on Governmental Medical Services, recommending to the Board the continuation of the VA Hometown Care Plan now in effect in Tennessee. Mr. Ballentine explained the contents of the contract. He pointed out that each year a mutual "letter of agreement" was presented from the VA to continue this arrangement with the Veterans Administration, if desired. All physicians participate voluntarily of their own individual accord. The Board of Trustees approved that such a letter be written to the

Director of the Out-Patient Department of the Veterans Administration.

8. The Executive Director presented the quarterly financial statement for the fiscal operations of the Association from January 1 through March 31, 1962. After review, a motion was made by Dr. Vaughan, seconded by Dr. Johnson, that the financial statement be adopted. **This motion was approved.**

9. Dr. Finks read a letter from Dr. C. D. Hawkes, acting Chairman of TSMA's Committee on Hospitals, concerning recommendations of the Hospital Committee. The matter dealt with a committee formed by the Tennessee Hospital Association for a program in the eight hospital councilor districts, the committee dealing with accreditation. The TSMA Hospital Committee recommended that physicians be appointed to help hospitals over the state to become accredited.

Dr. Burkhart made the motion that "the President of the Tennessee State Medical Association appoint a committee to consult with the Hospital Committee and work with their Councilor District Teams throughout the State for the purpose of improving hospital standards and working toward accreditation of such hospitals, a significant step toward raising the standards of many of the hospitals in Tennessee." The motion was seconded by Dr. Aste and the motion was approved.

10. A complaint concerning one facet of the TSMA group life insurance plan was presented by Mr. Ballentine and the Board referred it to the Committee on Insurance for action.

11. Dr. Bland Cannon presented his views to the Board of Trustees regarding physicians who are not citizens of the United States but who have met all of the qualifications required to treat patients. The Licensing Laws in the State of Tennessee do not permit a physician to practice in the State unless he is a citizen. Dr. Cannon strongly recommended that the Tennessee State Medical Association take action to amend the Licensing Laws in Tennessee to

permit qualified physicians to practice, while they are waiting completion of their applications for citizenship papers. Dr. Cannon stated that the Laws governing licensure should be carefully examined by TSMA's attorney to the end toward making necessary revisions in the Law, and with the cooperation of the Legislative Committee of TSMA, to amend the Licensing Act in the 1963 General Assembly.

The Board instructed Mr. Ballentine to outline this matter to Mr. Charles L. Cornelius, Sr., attorney for TSMA, and to point out the Board's wishes toward taking action in the General Assembly. The Board directed that TSMA's attorney be advised concerning possible inequities in the Medical Practice Act insofar as licensure is restricted to citizens of the United States, thus depriving well-qualified physicians who have made application for citizenship and who have been trained in our U. S. Medical Centers.

The Board directed that a committee of the Board be appointed to receive and review the attorney's opinion on this subject and that the committee make recommendations to the Board of Trustees toward initiating action to amend the Medical Practice Act.

Dr. Cannon stated that he would be glad to serve on such a study committee and recommended that Dr. Joseph W. Johnson serve as Chairman. He further stated that any physician who had been certified for his American Boards and provided that he was taking necessary steps to become a citizen of the United States, should be licensed to practice medicine in Tennessee.

**It was the unanimous action of the Board of Trustees that the steps outlined above be taken at the earliest possible time.**

There being no further business, the Board adjourned at 12:30 p.m.

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ROBERT M. FINKS, M.D., Chairman

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J. E. BALLENTINE, Executive Director



# President's Page



WILLIAM J. SHERIDAN,  
M.D.

The bard who eulogized the "Merry Month of May" doubtless had an entirely different concept of it than befelled the lot of your President during the past month. Duties of office were protean, yet diversification served to mask any adverse aspects of the entailed responsibilities and for the most part it has been a pleasant but arduous assignment.

As you may surmise, time does not permit the acceptance of the many requests and demands that are daily encountered but one is required to attempt to separate the wheat from the chaff. In an effort to adequately represent you and develop good will and liaison where both are most likely to be of value, your President is bending every effort to develop friendship with organizations outside the strictly medical field.

It is with regret that one must frequently decline certain invitations, which in truth might possibly be of more personal interest in order to attend others which he feels confident the interests of the Association are best served.

Plans have been developed in accordance with the recommendations of the House of Delegates to assist in the formation of a State AMPAC Committee. This Committee will **not** be a function of the State Association, but its membership will be composed of physicians who voluntarily join together as a separate and distinct organization for the purposes of political education and political action. Unfortunately, physicians can no longer confine all their energies and activities to the art and science of medicine. Legislative encroachment from diverse directions makes it mandatory that we must build and man our own defenses against creeping socialism if we are to protect and maintain our free enterprise system. Interposition of any degree of third party control from any source, governmental or otherwise, is a danger that must at all times be held in abeyance.

Of consuming interest during the past few days were the television programs presented in favor of and in opposition to the King-Anderson proposed legislation, which proposes limited hospital and nursing home care to a select segment of our citizenry. Expressed opinions seem to indicate that American Medicine won the debate. A victory here has far deeper roots than KA—it may even reach down to XYZ. Little straws show the direction the wind blows.

*William J. Sheridan, M.D.*

President

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June, 1962

## EDITORIAL

### MER-29 ADIEU

The recent withdrawal of MER-29 (Triparanol) from the market is noteworthy. This drug had been reported to have caused cataracts, loss of hair and certain changes in the skin. The accuracy of the reporting of the complications and the desirability of withdrawing the drug from the commercial market are not the subject of this discussion. The fact remains that MER-29 had been found to be capable of lowering the serum cholesterol level quite markedly. The question as to whether there is a need for the reduction of hypercholesteremia and whether this is helpful in preventing the development of atherosclerosis is a matter of opinion. Whether the intermediate stages in the formation of cholesterol, which continue under MER-29 therapy, are as harmful as cholesterol itself, is also a matter for debate. The fact does remain that it is reported that more than 500,000 patients with

hypercholesteremia had become dependent on this drug for help—where will they turn?

If their physicians feel constrained to lower the serum cholesterol levels in these patients, they might be interested in the possible use of Nicotinic Acid. Parsons<sup>1</sup> has been successful in the use of large amounts (4-6 grams daily) of Nicotinic Acid in accomplishing this result.

Fifty patients were treated with 4-6 grams of Nicotinic Acid daily for more than a year. The serum cholesterol level was reduced 25-30%, even though no dietary restriction was imposed. In addition, skin lesions such as xanthoma tuberosum and xanthelasmata may actually disappear. The discontinuance of therapy is followed by a prompt return of the previously observed hypercholesteremia.

The treatment is not completely benign since the flushing of the skin may be troublesome, gastro-intestinal symptoms may be difficult and a previously existent duodenal ulcer may be activated. Hyperuricemia may be seen without clinical gout. Alteration in liver function was observed with actual demonstration of cholestasis and cholangiolitis.<sup>2</sup> Finally, impairment of glucose tolerance is reported. Adult onset type of diabetes is not made worse. Three patients in the series of fifty, developed laboratory evidence of diabetes and the metabolic upset was not difficult to control. All three had evidence also of impaired liver function. About 20% of all patients on these large allotments had evidence of abnormal glucose tolerance tests. Pollock<sup>3</sup> feels that the upset in carbohydrate metabolism is a temporary phenomenon even though one of his three patients continues to have an abnormal glucose tolerance.

This may prove to be another situation in medicine where the use of excessive amounts of a very benign agent (Nicotinic Acid) may have a beneficial effect (hypo-

<sup>1</sup>Treatment of Hypercholesteremia by Nicotinic Acid. William B. Parsons, Jr., Arch. Int. Med., 107:639, 1961.

<sup>2</sup>Studies of Nicotinic Acid Use in Hypercholesteremia. William B. Parsons, Jr., Idem. 107:653, 1961.

<sup>3</sup>Nicotinic Acid and Diabetes. H. Pollock, Diabetes—Editorial 11:144, 1962.



cholesteremia) which may, in the future, need be forgotten because of its several undesirable side effects, particularly the upset in liver function and the disturbance of carbohydrate metabolism.

A. W.

## DEATHS

**Dr. Reynold Marvin Kirby-Smith**, 87, Sewanee, died May 8th at Sewanee.

**Dr. George Robertson Livermore, Sr.**, 83, Memphis, died May 15 in a Memphis hospital. He was a former president of the American Urological Association.

**Dr. W. H. Stallings**, 72, Friendship, died May 14th in Baptist Hospital at Memphis.

## PROGRAMS AND NEWS OF MEDICAL SOCIETIES

### Chattanooga-Hamilton County Medical Society

On May 1st, the Society conducted its regular meeting which was a dinner meeting sponsored by the Chattanooga Surgical Supply Company and conducted at the Chattanooga Golf and Country Club. Dr. Clarence J. Speas, founder and board chairman of Oak Ridge Atomic Industries, was the guest speaker. Dr. Speas' topic was "The Other Side of the Bomb."

### Nashville Academy of Medicine and

### Davidson County Medical Society

The Society conducted its meeting on May 15th in the Hermitage Hotel. This was the second quarterly combined medical meeting of the visiting medical staffs of Vanderbilt, St. Thomas, Baptist and General Hospitals. The meeting was preceded by a dinner.

Following dinner, the group separated into three simultaneous scientific presentations. Speakers were: Dr. Edith Potter, professor of pathology, OB-GYN Department, Chicago Lying-in Hospital; Dr. William H. Moretz, professor and chairman of the Department of Surgery, Medical College of Georgia, Augusta; and Dr. Frank London, Cardiac Clinic chief and Cardiopulmonary

Laboratory director, University of Tennessee Research Hospital, Knoxville.

Dr. Potter's topic was "The Effect of Maternal Infections on the Newborn Infant." Dr. Moretz' topic was "Prevention of Pulmonary Embolism by Partial Occlusion of the Inferior Vena Cava," and Dr. Frank London spoke on "Indications for Cardiac Surgery in the Adult Patient."

### Knoxville Academy of Medicine

The Society conducted its monthly meeting in the Academy of Medicine Building on May 8th. The scientific program consisted of a symposium on arterial hypertension, presented by the professional education committee of the East Tennessee Heart Association, with Dr. R. C. Sexton serving as moderator. The members of the panel were Dr. Wilson Powers and Dr. Joe Acker.

### Memphis-Shelby County Medical Society

The Memphis and Shelby County Medical Society held its regular monthly meeting on April 3rd in the Institute of Pathology Building. The Speaker was Dr. James F. Holland, chief of medicine at Roswell Park Memorial Institute in Buffalo, New York. Dr. Holland's topic was "Fruits of Chemotherapeutic Research."

The program was sponsored by the Memphis and Shelby County Chapter of the American Cancer Society.

The Society's House of Delegates met following the scientific program.

## NATIONAL NEWS

### The Month in Washington

(From the Washington Office, AMA)

Top officials of the American Medical Association at a White House conference with President Kennedy stood pat in support of the Kerr-Mills program and in opposition to providing health care for the aged under social security.

President Kennedy also maintained his position that the social security mechanism should be used.

Using Boisfeuillet Jones, special assistant to the Secretary of Health, Education and

Welfare as an intermediary, Kennedy invited the AMA officials to the White House just before the Administration started an all-out effort to get Congressional approval of legislation that would provide limited hospitalization and some other health care to older persons under social security.

The House Ways and Means Committee, which rejected the social security approach in 1960, is expected to vote on similar legislation again this year.

In its campaign for the King-Anderson Bill, which utilizes the social security system, the Administration and its allies called rallies of aged persons, exerted pressures through a White House "lobby" office, published a propaganda pamphlet at taxpayers' expenses and had federal employees drumming up support for the proposal.

Following the 45-minute White House session with Kennedy, Dr. Leonard W. Larson, Bismarck, N. D., AMA president, said the AMA representatives made clear that the great majority of the nation's physicians oppose the King-Anderson Bill or similar legislation. Dr. Larson also said the Administration is wrong in its statement that such legislation will be approved by Congress.

"We have a very good line of communication with the grass roots and the support of the old people for the Administration plan is decreasing now that they realize what it will mean to them," Dr. Larson said.

Dr. Larson charged that the Kennedy Administration is "trying to create a bandwagon" for its medical care for the aged program. He said "the propaganda indicates the Administration is not getting the support it needs for its bill, and we are convinced the trend is the other way."

In addition to Dr. Larson, AMA officials at the White House were: Dr. Hugh H. Hussey, Jr., Washington, D. C., chairman, AMA Board of Trustees; Dr. Percy E. Hopkins, Chicago, vice-chairman, AMA Board of Trustees; Dr. Norman Welch, Boston, speaker, AMA House of Delegates; Dr. Edward R. Annis, Miami, Fla., chairman, AMA National Speakers Bureau; Dr. F. J. L. Blassingame, Chicago, AMA executive vice-president, and Dr. Ernest B. Howard, Chicago, AMA assistant executive vice-president.

Dr. Annis said the meeting "was an honest interchange of divergent views on the method of providing medical care for the senior citizens of our country." He said the AMA position was that when the government provided for people in need, this was "a proper manifestation of the Christian-Judaic consideration for fellow man."

But when the government provides for everyone under a system of forced contributions this amounts to socialized medicine, Dr. Annis said.

On other health matters, Kennedy expressed interest in the AMA-sponsored First National Congress on Mental Health this fall. He said he hoped to be able to accept an AMA invitation to address it. He also noted several legislative and other items in which there was substantial agreement between the AMA and the Administration, including aid for construction of medical schools and establishment of the health resources advisory committee.

Shortly after the White House meeting, Republican senators met and agreed to hold firm in support of the Kerr-Mills bill and against King-Anderson. They refused to endorse any substitute.

One of the prime tactics of the Administration has been to give the impression that the King-Anderson bill enjoys wide public support. However, congressional polls of more than 450,000 voters revealed just the opposite with increasing public opposition evident toward the disputed plan. Of 43 polls taken during the current Congress 28 showed strong popular sentiment against the bill. The latest 16 polls ran 12 to 4 against it.

The American Dental Association reiterated opposition to the King-Anderson bill. An editorial in the ADA Journal stated "participation in a government-sponsored program of health care should be voluntary." ADA secretary Dr. Harold Hillenbrand called the bill "election time propaganda."

The campaign against the medical profession for its opposition to the King-Anderson bill has become "downright vicious," Rep. Don Short (R., N. D.) said.

"The distortions, untruths and half-truths that are making their rounds and being promulgated by various organizations in



this country is astounding," he said in a Congressional Record statement. "Our fine physicians and dentists in this country are being portrayed as evil, moneygrabbing monsters. Our medical associations are being portrayed in the same way. Nothing is ever said about the many sacrifices and the dedicated work of many physicians, dentists and surgeons. . . ."

## MEDICAL NEWS IN TENNESSEE

### Middle Tennessee Medical Association

The 135th semi-annual meeting of the Middle Tennessee Medical Association was conducted at the Lebanon Country Club, Lebanon, Tennessee, on May 17th.

The scientific program consisted of the following:

"Cholecystitis"—J. H. Tilley, M.D., Lebanon  
Discussion, Jefferson C. Pennington, Jr., M.D., Nashville

Symposium "Diabetes"—Moderated by Addison B. Scoville, Nashville. Panel Members: Rowe Driver, M.D., ophthalmologist; Fred Goldner, M.D., internist; Mrs. Jean McGaw, dietician; Douglas Riddell, M.D., surgeon; Bert Sproffkin, M.D., neurologist; John Tudor, M.D., urologist; Earl Wilkin-son, M.D., pediatrician; all of Nashville.

"Challenges of Modern-Day Medical Practice"—R. C. Kash, M.D., Lebanon

"Thoracic Surgical Emergencies in Infants" George Holcomb, Jr., M.D., Nashville

"Lumbar Disc Surgery in Patients Over 50 Years of Age"—Thomas F. Parrish, M.D., Nashville—Discussion, C. David Scheibert, M.D., Nashville

"The Medical Service of the New Army Division"—Maj. Foster C. McCaleb, M.C., U.S.A., Division Surgeon, 101st Airborne Division, Fort Campbell, Kentucky

"Carcinoma of the Colon in People Under Age 20"—Herman J. Kaplan, M.D., Nashville—Discussion, Douglas H. Riddell, M.D.

"Resection of Peribronchial Calcified Lymph Nodes"—Robert N. Sadler, M.D., Nashville—Discussion, George W. Holcomb, Jr., M.D.

Movie—"Mediastinal Teratoma in Infancy"

—Andrew Dale, M.D. and Gordon Sell, M.D., Nashville

### Selective Service Deferment of Residents and Interns

Recent discussions with the National Advisory Committee on the Selection of Physicians, Dentists and Allied Specialists have clarified several issues arising from the recently accelerated program of drafting interns and residents into military service. There is no basic change or new administrative regulation concerning the method of drafting physicians. Selective Service Officials, although aware of the educational value of hospital residency programs, are finding it necessary to use the draft mechanism to bring into the armed services the number of physicians now needed.

Defense Department as well as Selective Service officials advise that if each draft-age doctor keeps his local Selective Service board informed of his residency status, and if each hospital administrator keeps fully informed of the military classification of his house officers, the draft problem can be greatly alleviated. Selective Service officials plan to publish specific bulletins to provide doctors and hospitals with all necessary current information about the accelerated draft.

Meanwhile, there are a number of steps which both residency candidates and hospitals could and should take to avoid unnecessary disruption of training programs:

1. Prospective residents will be automatically classified 1-A upon completion of internship. It is essential that the prospective resident notify the proper Area Board about his appointment. The proper Area Board is that which has jurisdiction over the locale of the hospital to which he is appointed. Selective Service officials emphasize that such notification of the Area Board in no way will reflect on the resident's status with his own local board. If the prospective resident waits until he receives a 1-A classification notice from his local board, he has only ten days in which to make an appeal. Failure to appeal within the ten-day period will nullify his right to appeal.

2. Hospitals should ask all candidates for residency positions to furnish their Selec-

tive Service numbers, their draft classifications, and the addresses of their local boards. Selective Service officials recommend that the hospital notify the respective local boards of the effective dates of each resident's appointment. This notification is not an appeal, but it informs local boards of facts which may help in making a judgment on a draft candidate's change of status. An appeal from a draft status should be directed to the Area Board. The appointing hospital may, of course, support the prospective resident's appeal by letters to the Area Board.

3. Because the present national emergency is likely to be of extended duration, Selective Service officials urge hospitals to consider carefully the draft status of each prospective resident. It is recommended that, to the extent feasible, a hospital appoint draft-exempt candidates in sufficient proportion so that continuity of its residency program may be maintained.

### **Tennessee Psychiatric Hospital and Institute**

More than a magnificent monument was dedicated on May 3rd when the Tennessee Psychiatric Hospital and Institute was dedicated by Governor Buford Ellington. The hospital is located in Memphis.

The multi-million dollar institution will launch a three-pronged attack against the mammoth problem through research, training personnel and better service to patients. Guest speaker at the ceremony was Dr. Francis Gerty, director of the Illinois department of mental health, Springfield, Illinois, who urged careful future planning based on research and past experience.

The institution will be a teaching arm of the University of Tennessee Medical Units. It houses the state department's brain research laboratories where original work is being done to unravel the mysteries of the human brain.

It was announced that patients may be admitted to the new \$4,500,000 hospital within a very short time. Dr. Bruce E. Walls, Memphis, is superintendent of the new facility.

### **Vaccine Policy in Tennessee**

State health officials have formulated a

policy for the administration of Sabin oral polio vaccine and the Commissioner of Health, R. H. Hutcheson, M.D., recommends that all children under age 5 take it even though they have had Salk shots.

Dr. Hutcheson's announcement was the first public statement regarding the Sabin vaccine since its approval by the U. S. surgeon general. He said that the Salk Vaccine has made an impressive reduction in the number of polio cases in the past seven years and should continue to be given to all age groups above 5, and to children under 5 until adequate supplies of the oral vaccine are available.

### **Meharry Medical College**

A grant of \$300,000 to Meharry Medical College has been announced by the Danforth Foundation of St. Louis, Missouri. The grant will assist Meharry to enlarge its teaching staff and carry out a new approach in medical education.

### **University of Tennessee College of Medicine**

Dr. A. J. Ladman, associate professor of anatomy, has been awarded a research career development award by the U. S. Public Health Service.

★

Dr. Lester Van Middlesworth, professor of physiology at the University has been selected to receive a research award. The purpose of the award is to establish additional full professional positions in medicine and related areas; to assist in recruiting into these positions persons with the most thorough training and the greatest aptitude and promise for productive careers in research and teaching; and to provide still further incentive for young scholars to choose a career of research and teaching.

★

The Smith, Kline and French Foundation of Philadelphia has allocated \$5,000 to Dr. Homer Floyd Marsh, vice president of the University of Tennessee Medical Units. The fund will be used in a manner to benefit the medical units.



## PERSONAL NEWS

**Drs. Howard King, Robert N. Buchanan, Jr. and James R. Hamilton**, Nashville announce the removal of their office to 1905 Hayes Street.

**Dr. George K. Carpenter, Jr.** announces his association with **Drs. George K. Carpenter, Sr., S. Benjamin Fowler, Don L. Eyler, Thomas F. Parrish and Charles M. Hamilton**, Nashville, in the practice of orthopaedic surgery.

**Dr. Thomas M. Monroe and Dr. Thomas H. Curtis**, Chattanooga, have been notified of their qualifications as Diplomates of the American Board of Obstetrics and Gynecology.

**Dr. A. Roy Tyrer, Jr.**, Memphis, has been appointed to serve on the Committee on Voluntary Health Agencies of the American Medical Association.

**Dr. D. R. W. Shupe**, Madison, has been elected a Fellow in the American College of Obstetrics and Gynecologists.

**Dr. Kelly Avery**, Union City, recently addressed the Rotary Club on the subject, "Medical Care for Aging Citizens."

**Dr. Anthony P. Jerome**, Memphis, has returned from Mexico City and Rome, Italy, where he gave a series of lectures to medical students on "Plastic and Reconstructive Surgery."

**Dr. Lamb B. Myhr**, Jackson, has been installed as president of the West Tennessee Heart Association.

**Dr. John Smoot**, Knoxville, recently addressed the Knoxville Chapter of the Medical Assistants Society.

The Harriman Rotary Club was recently addressed by **Dr. Harrison Bourkard**, Knoxville, who showed a film on the Tri-County Crippled Adults Hospital at Memphis.

**Dr. Reid L. Brown and Dr. James M. Hays**, Chattanooga, have joined in the general practice of medicine in Chattanooga.

**Dr. Robert Sadler**, Nashville, was guest speaker at the meeting of the Livingston Rotary Club.

**Dr. John H. Burkhart**, Knoxville, recently addressed that city's Senior Citizens Center.

**Dr. H. Dewey Peters**, Knoxville, has been elected president of the Knoxville Executives Club.

**Dr. Spencer Y. Bell**, Knoxville, has been appointed to the State Board of Medical Examiners.

**Dr. Raymond W. McMullen** has located in Woodbury where he is associated with the staff at Good Samaritan Hospital.

**Dr. Clarence R. Sanders** has joined **Dr. Robert A. Moore** in the practice of general medicine and obstetrics at Gallatin.

**Dr. Fred Ownby**, Nashville, recently addressed the Tullahoma Rotary Club.

**Dr. E. Wayne Gilley**, Chattanooga, has been named a Fellow in the American College of Physicians.

**Dr. Thomas N. Stern**, Memphis, has been named President-elect of the Memphis Heart Association.

Three Nashville physicians recently participated in a lecture and an educational film on cancer. They were: **Drs. Daphne Sprouse, Dough W. Smith and David R. Pickens, Jr.**

**Dr. M. H. Weathers**, Loretto, has been named Mayor of that City.

**Dr. James P. Richards and Dr. A. Pat Kelly** announce the opening of their offices for the practice of medicine in Lake City.

**Dr. Ernest L. Hendrix**, Oak Ridge, is associated with **Dr. Robert Bigelow** in the practice of surgery.

**Dr. William C. Francis**, Cookeville, has announced the opening of his office for the practice of medicine in association with **Dr. Thurman Shipley**.

**Dr. Wesley Stoneburner**, Chattanooga, has been named president of the Chattanooga Civitan Club.

**Dr. Oscar N. Torian**, Sewanee, has been awarded the Phi Delta Theta's outstanding alumnus award of the year.

**Dr. Gould A. Andrews**, Oak Ridge, is the new chairman of the medical division of Oak Ridge Institute of Nuclear Studies. He succeeds **Dr. Marshall Brucer**.

**Dr. J. O. Walker**, Franklin, has announced his candidacy for State Senator from the District composed of Williamson, Hickman and Cheatham counties.

**Dr. C. R. Webb**, Ripley, spoke on "civil defense" at the monthly meeting of the Tennessee Licensed Practical Nurses of Ripley.

**Dr. Rudolph M. Landry and Dr. J. Marsh Frere, Sr.**, Chattanooga, were named second vice president and recording secretary, respectively, of the Association of Surgeons of the Southern Railway System.

**Dr. Martin Bronson**, Elizabethton, recently addressed the Woman's Auxiliary of the Washington-Carter-Unicoi County Medical Society.

**Dr. Stuart Smith**, Chattanooga, was a recent guest speaker before the Chattanooga Cystic Fibrosis Association.

**Dr. Ralph R. Braund**, Memphis, addressed the Society of Head and Neck Surgeons in Montreal, Canada.

**Dr. Luke Nabers**, Morristown, has been elected Governor of Rotary Club District 678.

**Dr. David S. Carroll**, Memphis, recently addressed the Downtown Exchange Club. He discussed the problems uncovered in cancer research.

**Dr. James G. Hughes**, Memphis, has been appointed to a new committee on international child health of the American Academy of Pediatrics.

## ANNOUNCEMENTS

### Postgraduate Course in Gastroenterology

The annual course in Postgraduate Gastroenterology of the American College of Gastroen-

terology will be conducted at the Morrison Hotel in Chicago, November 1-3, 1962. For further information write to the American College of Gastroenterology, 33 West 60th Street, New York 23, New York.

### Physicians Recently Licensed in Tennessee

Mahmoud Sidky-Afifi, Johnson City  
Edward C. Humphrey, Knoxville  
Ben J. Birdwell, Gainesboro  
Leon H. Cochran, Nashville  
Robert H. Hackman, Nashville  
Clay A. Renfro, Nashville  
Garner E. Robinson, Hermitage  
Allyn M. Lay, Alcoa  
James N. Moore, Jr., Denver, Colorado  
Charles J. Smith, Chattanooga  
Don A. Wheeler, Pikeville  
Julia W. Deltroff, New York  
Joseph C. Denniston, Donelson  
Thomas M. Hall, Payson, Utah  
Mathias J. Coleman, Allentown, Pa.  
William H. Schettler, Jacksonville, Fla.  
Sam T. Barnes, Nashville  
Wallace D. Grissom, Old Hickory  
Edwin E. Goldman, Elizabethton  
Elias W. Rosenberg, Memphis  
Nancy I. Law, Knoxville  
Henry J. Harding, Jr., Atlanta, Ga.  
Cicero L. Lincoln, Mountain Home, Tenn.  
Watson B. Larkin, Marshfield, Wisconsin  
Larry T. Arnold, Nashville  
C. W. Bryant, Salt Lake City, Utah  
Donald L. Duncan, Memphis  
Howell P. Hoover, Jr., Memphis  
Samuel D. Rhem, III, Nashville  
Frank H. Lambert, Memphis  
Thomas W. Marks, Memphis  
James T. Odom, Crossville  
Roy J. Vermilion, Nashville  
John O. Williams, Jr., Nashville

Edward D. Conner, Knoxville  
Crampton H. Helms, Winston-Salem, N. C.  
George R. Park, Jackson, Mississippi  
Jimmy F. Webb, Memphis  
Gary J. Prim, Knoxville  
William J. Bickers, Alcoa  
William C. Greer, Memphis  
Sanford C. Spraragen, Nashville  
James P. Richards, Knoxville  
Howard W. Marker, Memphis  
Frank C. Combes, Chattanooga

### Upper Cumberland Medical Society

The Upper Cumberland Medical Society will conduct its annual summer meeting at the Cloyd Hotel, Red Boiling Springs, Tennessee, June 19-20.

### American Rheumatism Association

The American Rheumatism Association annual meeting will be held on Thursday and Friday, June 21 and 22, 1962, at the Edgewater Beach Hotel in Chicago, following which a Postgraduate Course on Rheumatic Diseases will be held on Saturday and Sunday, June 23 and 24. This course is sponsored by the Chicago Rheumatism Society, the American Rheumatism Association and the Illinois Chapter of the Arthritis and Rheumatism Foundation. The course will be acceptable for ten hours of category II credit by the American Academy of General Practice. Further information may be obtained from Dr. E. W. Passarelli, 8 South Michigan Avenue, Chicago 3.

### American Geriatrics Society

The 19th Annual meeting of the American Geriatrics Society will be held June 18-20, in Chicago with headquarters in the Palmer House. Further information may be obtained from Mr. Henry Blanchard, Executive Director, American Geriatrics Society, 10 Columbus Circle, New York 19, New York



# CONSTITUTION AND BY-LAWS OF THE TENNESSEE STATE MEDICAL ASSOCIATION

## CONSTITUTION

### ARTICLE I

#### Name of the Association

The name and the title of this organization shall be "The Tennessee State Medical Association."

### ARTICLE II

#### Purposes of the Association

The purposes of this Association shall be to federate and to bring into one compact organization, through the component societies, the medical profession of the State, and to unite with similar associations in other states to form the American Medical Association.

The aims of this association shall be:

1. The extension of medical knowledge, the advancement of medical science, the maintenance of medical ethics, and the competence of the art of medical practice.

2. The elevation of the standards of medical education.

3. The enforcement of just laws that have to do with the health and welfare of the people of this State.

4. The promotion of friendly intercourse among physicians, and the guarding and fostering of their material interests.

5. The enlightenment and direction of public opinion in regard to the problems of health and medical care, and the promotion of understanding between the public and the medical profession.

6. To make the medical profession of the State more capable and honorable within itself and more useful to the public in the prevention and cure of disease and in prolonging and adding comfort to life.

### ARTICLE III

#### Component Societies

Component Societies shall consist of those local Medical Societies which hold charters from this Association.

### ARTICLE IV

#### Composition of the Association

**Section 1.** This Association shall consist of Active Members, Associate Members, Veteran Members, Honorary Members, and Student Members.

**Sec. 2.** The Active Members of this Association shall be active members of the Component Medical Societies who have been certified to the Secretary of this Association and whose dues have been paid for the current year.

**Sec. 3.** Associate members shall be commissioned officers in active service of the U. S. Armed Forces, Veterans Administration, and Public Health Service, residing in the State, who are elected to membership by a Component Society and certified to the Secretary of the State Association as Associate Members. Such physicians may

be eligible for active membership, if otherwise qualified.

**Sec. 4.** Veteran Members are those who, because of age or impaired health, have been elected Veteran Members of their Component Societies, and who are so certified to the State Association annually by the Component Societies.

**Sec. 5.** An Honorary Member is one who is a member of another State Association, or other reputable society, who is pre-eminent in general or special scientific work, whose name, with detailed information concerning his education and professional qualification, is presented in writing by three members of this Association, and who is elected by a two-thirds vote of the House of Delegates.

**Sec. 6.** A Student Member is any student regularly and duly enrolled in a medical school in Tennessee and who is a candidate for the degree of Doctor of Medicine, and who is certified by his Component Medical Society.

### ARTICLE V

#### House of Delegates

The House of Delegates shall be the legislative and business body of the Association, and shall consist of (1) Delegates elected by the Component Societies; (2) ex-officio the Officers; (3) the five most recent surviving ex-Presidents of the Association, except that all ex-Presidents who were living in April 1956 shall be members for life; (4) the Associations delegates to the American Medical Association, the Commissioner of Public Health, and the Commissioner of Mental Health for the State of Tennessee, provided such Commissioner of Public Health or Mental Health is a member in good standing of the Tennessee State Medical Association.

### ARTICLE VI

#### Sections

The House of Delegates may provide in the By-Laws for a division of the scientific work of the Association into appropriate Sections as the need may arise.

### ARTICLE VII

#### Annual Meetings of the Association

The Association shall hold an Annual Meeting at such time and place as provided in the By-Laws, and the Scientific Meetings shall be open to all registered members and guests.

### ARTICLE VIII

#### Officers

**Section 1.** The officers of the Association shall be a President, President-Elect, a Vice-President for each of the three grand divisions of the State, a Secretary-Editor, the six elected Trustees, ten Councilors, a Speaker of the House of Delegates, and a vice-speaker of the House of Delegates.

**Sec. 2.** The Board of Trustees shall consist of the President of the Association, the Speaker of

the House of Delegates, the immediate Past-President, the President-Elect, the Secretary-Editor of the Journal, and six members elected by the House of Delegates as hereinafter provided.

Six members of the Board of Trustees shall be elected by the House of Delegates, two from each grand division of the State, and no two will be from any one component society.

The elected Trustees shall serve for a period of three years and no Trustee shall be eligible immediately to succeed himself. The Board of Trustees will organize by the election of a Chairman. The Chairman of the Board of Trustees shall be ex-officio Treasurer of the Association.

**Sec. 3.** There shall be one councilor for each of the ten councilor districts in Tennessee and such councilor districts shall be divided into sections to include those counties in each of the councilor districts as defined by the action of the House of Delegates in April, 1961, and listed in this section. The councilors shall be elected for a term of two years, in the following manner: councilors from odd numbered districts will be elected in even calendar years and councilors from even numbered districts will be elected in odd calendar years. No councilor shall serve more than four consecutive years. The councilor districts shall be composed of the counties as listed in each of the following ten districts:

District No. 1: Carter, Claiborne, Cocke, Grainger, Greene, Hancock, Hawkins, Johnson, Sullivan, Unicoi, Washington.

District No. 2: Anderson, Blount, Campbell, Hamblen, Jefferson, Knox, Loudon, Morgan, Roane, Scott, Sevier, Union.

District No. 3: Bledsoe, Bradley, Grundy, Hamilton, Marion, McMinn, Meigs, Monroe, Polk, Rhea, Sequatchie.

District No. 4: Clay, Cumberland, DeKalb, Fentress, Jackson, Macon, Overton, Pickett, Putnam, Smith, Van Buren, Warren, White.

District No. 5: Bedford, Coffee, Franklin, Lincoln, Marshall, Moore.

District No. 6: Cannon, Cheatham, Davidson, Dickson, Houston, Montgomery, Robertson, Ruthersford, Stewart, Sumner, Trousdale, Williamson, Wilson.

District No. 7: Giles, Hickman, Humphreys, Lawrence, Lewis, Maury, Perry, Wayne.

District No. 8: Benton, Carroll, Chester, Crockett, Decatur, Fayette, Gibson, Hardin, Hardeman, Haywood, Henderson, Madison, McNairy.

District No. 9: Dyer, Henry, Lake, Lauderdale, Obion, Weakley.

District No. 10: Shelby, Tipton.

The Council shall organize annually by the election of a Chairman and a Secretary.

**Sec. 4.** The President-Elect, the three Vice-Presidents, the Secretary-Editor and the Speaker of the House of Delegates shall be elected annually for one year, and the Speaker of the House shall hold office for not more than four consecutive years. The President-Elect shall assume office as President at the expiration of the term of the President.

**Sec. 5.** The President, Secretary, and Speaker of the House of Delegates shall be ex-officio members of the Council.

**Sec. 6.** Every officer shall hold office until his successor is elected and assumes office.

**Sec. 7.** All officers of the Association, except the Councilors, shall be elected at the second regular session of the House of Delegates, and they shall assume office when elected.

**Sec. 8.** No member who has not been a member in good standing for five years next preceding election, or who is not in attendance at the meeting, shall be eligible for election as President-Elect or Vice-President.

## ARTICLE IX

### The Powers and Duties of the Board of Trustees

**Section 1.** The Board of Trustees shall have entire control of the publication, the policy and the editorial and financial management of the Journal of the Association. It shall be authorized and empowered to make all contracts necessary for the conduct of the Journal.

**Sec. 2.** The Treasurer of this Association shall be the custodian of all the funds of the Association.

**Sec. 3.** The Board of Trustees shall hold semi-annual meetings, one of which shall be held on the last day of the Annual Meeting, and such other meetings as the business of the Association may require, subject to the call of the Chairman. The Board of Trustees shall make expenditures of the funds of the Association dependent upon the availability of such funds as determined by the Board of Trustees and as ordered by the House of Delegates. The Board of Trustees shall render at the Annual Session a full and detailed accounting of all receipts and disbursements.

**Sec. 4.** In the event of a vacancy by death or resignation of any member of the Board of Trustees between the Annual Meetings of the Association, the Vice-President for that division of the State in which the vacancy occurs, shall serve as a member of the Board of Trustees until the next annual meeting.

**Sec. 5.** The Board of Trustees shall be the Executive Board of the Association to determine the policy and details of management between sessions of the House of Delegates.

**Sec. 6.** The Board of Trustees shall serve without compensation, except the Chairman; who is ex-officio the Treasurer, whose compensation shall be fixed by the House of Delegates; however, their actual expense in attending the meetings of the Board shall be paid out of the funds of the Association. This is not to apply where a meeting is held at the Annual Meeting.

## ARTICLE X

### Fiscal Year and Dues

**Section 1.** The fiscal year of the Association shall be from January 1 through December 31.

**Sec. 2.** The annual dues of Active Members shall be fixed in the By-Laws. No dues shall be paid by Veteran, Associate, Student, or Honorary Members. (Chap. IX.)



**ARTICLE XI****Referendum**

The General Meeting of the Association may, by a two-thirds vote of the members present and voting, order a general referendum upon any question pending before, or already decided by the House of Delegates. The House of Delegates may, by a similar vote of its own members, or after a vote of the general meetings, submit any such question to the membership of the Association for a final vote. If the persons voting shall comprise a majority of all the members registered at that Annual Meeting, a majority of such vote shall determine the question and be binding upon the House of Delegates.

**ARTICLE XII****The Seal**

The Association shall have a common seal, with the power to break, change or renew the same at pleasure, by action of the House of Delegates.

**ARTICLE XIII****Amendments**

The House of Delegates may amend any article of this Constitution by a two-thirds vote of the Delegates registered at the Annual Session; provided that such amendment shall have been presented in open meeting at the previous Annual Session, and that it shall have been sent officially to each component Society at least two months before the Session at which action is to be taken.

**BY - LAWS****CHAPTER I****Membership and Sections**

**Section 1.** All Active Members, Associate Members, Veteran Members, Student Members, Honorary Members, and invited guests shall be privileged to attend all scientific meetings and take part in the discussion of all scientific questions, but Active Members and Veteran Members only shall be entitled to vote and hold office.

**Sec. 2.** A physician whose name is upon a properly certified roster of members, or list of delegates of a chartered component Society, which has paid its annual assessment, or an invited guest, is eligible to register at the annual meeting.

**Sec. 3.** No person who is under sentence of suspension or expulsion from any component Society of this Association, or whose name has been dropped from its roll of members shall be entitled to any of the rights or benefits of this Association nor shall he be permitted to take any part in any of its proceedings until such time as he has been relieved of such disability.

**Sec. 4.** Each member in attendance at the Annual Meeting shall enter his name on the registration book or card, indicating the component Society of which he is a member. When his right to membership has been verified, by reference to the roster of his society, he shall receive a badge, which shall be evidence of his right to all the privileges of membership at that meeting. No Member or Delegate shall take part in any of the proceedings of an Annual Meeting until he has complied with the provisions of this Section.

**CHAPTER II****Annual and Special Meetings of the Association**

**Section 1.** The Association shall hold an Annual Meeting beginning on Monday preceding the second Tuesday in April, and at such place as has been fixed at the preceding Annual Session, but it is agreed that the meetings shall rotate annually to Middle, West, and East Tennessee.

The House of Delegates shall meet annually at the place of the Annual Meeting of the Association. It shall meet on Sunday preceding the second Tuesday of April and thereafter until its work is completed.

If the business interests of the Association require, it may meet in advance of or remain in session after the final adjournment of the general meeting, such extraordinary sessions being subject to the call of the Speaker of the House of Delegates.

**Sec. 2.** Special Meetings of either the Association or House of Delegates shall be called by the President at his discretion or upon petition of twenty Delegates.

**Sec. 3.** If for any valid reason an Annual Meeting cannot be held on date as named, the President, the three Vice-Presidents, the Secretary, and the Board of Trustees may fix another date, provided the Secretaries of component Societies are notified as far in advance of the changed date as possible by the Secretary of the Association and, if time permits, each Member shall be notified by a personal communication mailed to his address.

**CHAPTER III****General Meetings**

**Section 1.** The General Meeting shall include all registered Active Members, Associate Members, Veteran Members, Student Members, Honorary Members and guests, all of whom shall have equal rights to participate in the proceedings and discussions. Each General Meeting shall be presided over by the President, or, in his absence or disability, or by his request, by one of the Vice-Presidents. Before it, at such time and place as may have been arranged, shall be delivered the Annual Address of the President and the annual orations; and the entire time of the meeting, so far as possible, shall be devoted to papers and discussions, clinics, and demonstrations, relating to scientific medicine.

**Sec. 2.** The General Meeting shall have authority to create committees or commissions for scientific investigation of special interest and importance to the profession and public, and to receive and dispose of reports of the same, but any expense in connection therewith must first be authorized by the House of Delegates.

**Sec. 3.** Except by special vote, the order of exercises, papers, and discussions as set forth in the official program, shall be followed from day to day until it has been completed, and all papers omitted shall be recalled in regular order.

**Sec. 4.** No address or paper before the Association, except the address of the President and

invited guests, shall occupy more than twenty minutes in its delivery; and no Member may speak longer than five minutes, nor more than once on the same subject, provided each essayist be allowed five minutes in which to close the discussion.

**Sec. 5.** All papers read before the Society shall be its own property. Each paper shall be deposited with the Secretary when read.

#### **CHAPTER IV**

##### **House of Delegates**

**Section 1.** The House of Delegates shall meet annually at the time and place of the Annual Meeting of the Association. It shall meet on the Sunday preceding the second Tuesday in April and thereafter until its work is completed. If the business interests of the Association require, it may meet in advance of or remain in session after the final adjournment of the General Meeting, such extraordinary sessions being subject to the call of the Speaker of the House of Delegates.

**Sec. 2.** Each component Society shall be entitled to send to the House of Delegates each year one delegate for every fifty active and veteran members and one for every fraction thereof, based upon the number of such members in the component Society in good standing as of December 1 of the year preceding the session of the House. Each component Society holding a charter from the Association, which has made its annual report and paid its assessment as provided in the Constitution and By-Laws, shall be entitled to at least one delegate.

**Sec. 3.** A majority of the registered Delegates shall constitute a quorum, and all the sessions of the House of Delegates shall be open to Members of the Association.

**Sec. 4.** From among members of the House of Delegates the Speaker of the House of Delegates, for the purpose of expediting proceedings, shall appoint Reference Committees to which reports and resolutions shall be referred. He shall also appoint a Committee on Credentials and such other committees as may be considered by him to be necessary.

**Sec. 5.** It shall elect representatives to the House of Delegates of the American Medical Association in accordance with the Constitution and By-Laws of that body, for a period of two years, no two residing in the same grand division of the State, except when more than three delegates are authorized. The Association shall pay the expenses of each Delegate representing the Association at the American Medical Association meetings.

**Sec. 6.** It shall, upon application, provide and issue charters to component Societies organized to conform to the spirit of this Constitution and By-Laws of the Association, or in the ethics of the American Medical Association, when so recommended by the Councilors.

**Sec. 7.** In sparsely-settled sections it shall have authority to organize the physicians of two or more counties into one component Society, the

name to be chosen by that Society, so as to distinguish them from district and other classes of Societies; and these Societies, when organized and chartered, shall be entitled to all the privileges and representations provided herein for component Societies.

**Sec. 8.** It shall have authority to appoint special committees for special purposes from its own membership, or from among members of the Association who are not members of the House of Delegates; and such committeemen shall report to the House of Delegates in person, and may participate in the debate thereon.

#### **CHAPTER V**

##### **Election of Officers**

**Section 1.** All elections shall be by ballot of the House of Delegates and the majority of the votes cast shall be necessary to elect.

**Sec. 2.** On or before March 1st each year, preceding the annual session, the Board of Trustees shall consider the names of the members of the House of Delegates of the Association, and select nine delegates, from those eligible, to compose a Nominating Committee. The members of the Nominating Committee shall represent the three grand divisions of the state, with three members from East Tennessee, three members from Middle Tennessee and three members from West Tennessee. No two members of the Nominating Committee shall represent the same county medical society. The Executive Director of the Association shall notify the secretaries of all component medical societies of the names of members of the Nominating Committee, with the request that those members named to the Nominating Committee shall be made known to the membership of each of the component societies.

The Nominating Committee will be supplied, by the Board of Trustees, with the offices that are to be filled and elected by the House of Delegates. Any county medical society desiring to place the name of any physician in nomination for an office of the Tennessee State Medical Association, will have the opportunity to contact its representatives on the Nominating Committee.

It shall be the duty of the Nominating Committee to hold at least one meeting, prior to the opening session of the House of Delegates at a time and place designated by the President of the Association, elect a chairman and consider candidates for offices to be filled. The committee shall report its selection of nominees to the House of Delegates. The Nominating Committee shall name at least one member for each of the offices to be filled at the general session.

**Sec. 3.** The Councilors shall be elected on the afternoon of the first day of the Session after their report is made to the House of Delegates, so that they may organize and plan the year's work. The nominations of Councilors may be made by the Nominating Committee.

**Sec. 4.** The report of the Nominating Committee and the election of officers, except the Councilors, shall be the first order of business of



the House of Delegates, after reading of the minutes on the morning of the second day of the General Meeting of the Association.

**Sec. 5.** Nothing in this Chapter shall be construed to prevent additional nominations being made by members of the House of Delegates.

**Sec. 6.** In balloting for the nominees for President-Elect, if on the first ballot no one receives a majority of the votes cast, the name receiving the smallest number of votes shall be dropped, and the balloting shall proceed in this manner until an election is had.

## CHAPTER VI

### Duties of Officers

**Section 1.** The President, or his appointees, shall preside at all meetings of the Association. He shall appoint all members of Committees not otherwise provided for, shall deliver an Annual Address at such time as may be arranged, shall give a deciding vote in case of a tie, and shall perform such other duties as custom and parliamentary usage may require. He shall be the head of the profession of the State during his term of office, and, as far as practicable, shall visit, by invitation, the various Sections of the State and assist the Councilors in building up the Component Societies and in making their work more practical and useful. The retiring President shall be ex-officio a member of the Board of Trustees for one year.

**Sec. 2.** The Vice-Presidents shall assist the President in the discharge of his duties, as requested by the President. In the event of his death, resignation, inability to serve, or removal from office, the Vice-President to succeed him shall be from the same Grand Division of the State.

**Sec. 3.** The Treasurer shall give bond for the trust reposed in him, for such amount as the remaining members of the Board of Trustees may name, said bond to be made by a regular bonding company, and paid for by the Association. He shall demand and receive all funds due the Association, together with bequests and donations. All funds shall be deposited in a National Bank. He shall pay money out of the treasury on bills certified to by the Secretary or Executive Director of the Association only; he shall subject his accounts to such examination as the House of Delegates may order; he shall annually render an account of his acts and of the state of the funds in his hands.

**Sec. 4.** The Secretary-Editor of this Association, as Chairman, acting with the Committee on Scientific Work, shall prepare and issue the programs for and attend the meetings of the Association, and shall keep the minutes, or cause them to be kept, of the proceedings. He shall be Editor-in-Chief of the Journal of the Association and shall discharge such other duties as the Trustees shall specifically direct. His honorarium shall be determined by the Board of Trustees.

**Sec. 5.** The Board of Trustees shall be empowered to select and remove, without assigning

cause, an Executive Director. The Executive Director may or may not be a member of this Association, and may or may not be a graduate in medicine. He shall be custodian of all records, books, papers, building and property belonging to the Association, except such property belonging to the Secretary-Editor, the Council, the Sections and the various committees, and shall keep account of and promptly turn over to the Treasurer all funds of the Association which may come into his hands; he shall provide for the registration of members and delegates at the Annual Meeting; and upon request, shall transmit a copy of this list to the American Medical Association. Insofar as in his power, he shall use the printed matter, correspondence, and influence of his office to aid the Councilors in the organization of the component Societies and in the extension of the power and influence of this Association. He shall visit each councilor district at least once a year and oftener, if advisable, and assist the Councilors in organizing unorganized counties, and use every means possible to promote the interests of the Association. Should the Executive Director and Councilors deem it wise to organize two or more counties into one society, they shall have the right to take such action and such societies shall be recognized by the State Association. He shall conduct the official correspondence, notifying members of meetings, officers of their election, and committees of their appointment and duties. He shall discharge such other duties as the Board of Trustees shall direct. He shall act as business manager of the Journal of the Association, and he shall be the director of all activities in the central office. His salary shall be determined by the Board of Trustees. He shall be required to furnish bond paid for by the Association in the amount designated by the Board of Trustees.

**Sec. 6.** The Speaker of the House of Delegates shall preside over that body and perform the usual duties of such officer. He shall sign the Minutes of its transactions when same have been read and approved by the House. In the event of his absence for any cause, or upon request of the Speaker, the Vice Speaker of the House of Delegates, shall perform those duties. The Speaker shall also be ex-officio member of the Board of Trustees.

**Sec. 7.** In the absence of the Secretary, the House of Delegates may elect a Temporary Secretary.

**Sec. 8.** In the event of the death, resignation, disability, or removal of any official of this Association, other than the President, or a member of the Board of Trustees, the vacancy so created shall be filled by the Board of Trustees, and the officer so appointed shall serve until the next regular session of the House of Delegates.

This shall include Delegates and Alternate Delegates to the House of Delegates of the American Medical Association.

## CHAPTER VII

### Council

**Section 1.** The Council shall hold meetings during the Annual Meeting of the Association, and at such other times as necessity may require, subject to the call of the Chairman or on petition of three Councilors. It shall meet after the election of Councilors on the second day of the Annual Session for organization, and for the outlining of work for the ensuing year. At this meeting it shall keep a permanent record of its proceedings. Five Councilors shall constitute a quorum.

**Sec. 2.** Each Councilor shall be the representative of the Tennessee State Medical Association in his District in matters pertaining to the conduct of members and of component societies. He shall make investigations and suggest solutions of problems which come to his attention. He shall make annually a written report of his activities to the Council.

**Sec. 3.** The Council may recommend to the House of Delegates censure, suspension, or expulsion of any member; or recommend to the House of Delegates censure or revocation of the Charter of any component society after a hearing before such persons and in such manner as the Council shall direct at which the accused member or component society, with or without counsel, shall be given an opportunity for a full and equitable hearing; or may suspend or drop from membership any member for the non-payment of dues. Any member shall be dropped from membership automatically upon the filing by any person with the Council of a certified copy of the final order of revocation of license of such member by any tribunal of competent jurisdiction. Any member suspended, expelled, or dropped from the membership may be reinstated by the affirmative vote of the majority of the House of Delegates upon recommendation of the Council. It shall make such report or recommendation to the House of Delegates as it deems to the best interest of the Association.

## CHAPTER VIII

### Committees and Their Duties

**Section 1.** (a) The Committees of this Association shall be Standing and Special Committees. The Standing Committees shall be as follows:

1. A Committee on Scientific Work.
2. A Committee on Public Policy and Legislation.
3. A Liaison Committee to the Public Health Department.
4. A Committee on Memoirs.
5. An Insurance Committee.
6. A Committee on Post-Graduate Medical Education.
7. A Committee on Cancer.
8. A Committee on Hospitals.
9. A Grievance Committee.
10. An Advisory Committee to the State Department of Public Welfare.
11. A Public Service Committee.
12. A Rural Health Committee.
13. A Committee on Prepaid Health Insurance.

14. A Committee on Tennessee Medical Foundation.

(b) The members of these standing committees shall be appointed by the Board of Trustees. The terms of service of members of standing committees shall be for a period of one to three years except when otherwise provided in the By-Laws.

The appointments shall be made for such a period of years that the terms of not more than one-third of the members will terminate each year. Each standing committee shall make a report to the House of Delegates at each Annual Session.

(c) Special Committees may be appointed from time to time by the President or the Board of Trustees to carry on special activities.

**Sec. 2.** The Committee on Scientific Work shall consist of ten members, nine of whom are appointed. The Secretary-Editor shall be a member, and Chairman of the Committee. It is the duty of this Committee to plan and provide the scientific program for each meeting of this Association. Previous to each Annual Meeting it shall prepare and issue a scientific program which shall be adhered to by the Association as nearly as practicable. It shall also be the duty of this Committee actively to assist the Secretary-Editor and those acting as the Editorial Board in preparing the scientific portion of the Journal of the Association.

**Sec. 3.** The Committee on Public Policy and Legislation shall consist of nine members, one from each congressional district of the state. The committee shall be appointed by the Board of Trustees and the Board will appoint the chairman of the committee. The Secretary-Editor will be ex-officio, a member of the committee. The committee shall be organized with three members to be named for three years, three for two years and three for one year. Thereafter, members of the committee shall be named for a term of three years each. In the work of the committee, if it is found that additional members are necessary in the conduct of the committee's business, the committee may request the Board of Trustees for additional appointments to serve one year terms. Under the direction of the House of Delegates, it shall represent the Association in securing and enforcing legislation in the interest of the public health and of scientific medicine. It shall keep in touch with professional and public opinion, shall endeavor to shape legislation so as to secure the best results for the whole people, and shall utilize every organized influence of the profession to promote the general influence in local, state, and national affairs and elections. Its work shall be done with the dignity becoming a great profession, and with that wisdom which shall make effective its power and influence. It shall have authority to be heard before the entire Association upon questions of great concern at such times as may be arranged during the Annual Meeting.

**Sec. 4.** The Liaison Committee to the State Public Health Department shall consist of five members, to be appointed by the Board of Trustees of the Association and who shall name the Chair-



man of the Committee for the period of the appointee's term of office. At least one member shall be from each grand division of the State. One member shall be appointed for a period of five years; one for four years; one for three years; one for two years; and one for one year. Thereafter, one member shall be appointed annually for a period of five years.

It shall be the duty of this Committee to confer with the officials of the Department of Health of the State in matters of policy affecting the profession of the State; and it shall be the further duty of this Committee to confer with any member or members of this Association in matters concerning the activities of the Department of Health of the State. Provided, that all matters over which this Committee shall have jurisdiction shall be presented to the Committee, through its Chairman, in writing.

It shall be the duty of the Committee to make a detailed annual report to the House of Delegates of its activities; said report being subject to review by the House of Delegates. In the interval between the annual sessions of the House of Delegates the action of this Committee by a majority vote shall be final.

In the event of a vacancy in the membership of the Committee for any cause, said vacancy shall be filled by appointment by the Board of Trustees, said appointee assuming the position on the Committee for the unexpired term of the member whom he succeeds. The House of Delegates directs the Liaison Committee to act in an advisory manner to the Public Health Council as now constituted, in the matter of formation of all policies.

**Sec. 5.** The Committee on Memoirs shall perform such duties as will contribute to the proper recognition of deceased members.

**Sec. 6.** The Committee on Insurance shall consist of three members, one from East, one from Middle, and one from West Tennessee, to be appointed by the Board of Trustees of the Association. One member shall be appointed for one year, one for two years, and one for three years. Thereafter one member shall be appointed annually for a term of three years. Any vacancy shall be filled for any unexpired term that might occur by the Board of Trustees at any Annual Session.

It shall be the duty of this Committee to attend to all group insurance in which this Association is or may become interested. It shall have power to select insuring companies, accept or reject master policies, arrange premium rates, and act as trustees for this Association in the matter of such group insurance.

All actions of the Committee shall be subject to the approval of the Board of Trustees.

The Chairman of the Committee shall be designated by the Board of Trustees. He shall report to the House of Delegates at each Annual Session upon the activities of the Committee during the preceding year. All necessary expenses of the Committee in the performance of its duties shall be paid by the Treasurer of this Association upon

certification of the expenses by the Chairman of the Committee, but this shall not apply to attendance at meetings held at the Annual Meeting.

**Sec. 7.** The Committee on Postgraduate Medical Education shall have for its duties the promotion of postgraduate medical activities among members of this Association.

The members of the Committee shall be appointed by the Board of Trustees and shall have representation from each Councilor District, from each of the major specialties, and from each participating medical school.

The Chairman shall be appointed by the Board of Trustees.

**Sec. 8.** The Committee on Cancer shall promote educational activities directed at two objectives: (a) the fullest possible knowledge on the part of the medical profession concerning the recognition of malignancy in its early stages, and (b) the disposition on the part of lay people to consult a well-qualified physician when a condition presents which may be an early malignancy.

**Sec. 9.** The Committee on Hospitals shall consider all matters relating to the operations of hospitals as the same may affect the medical profession and the public welfare. It shall make recommendations to the House of Delegates when in its judgment action should be taken on any matter pertaining to the policies enforced in the operation of a hospital.

The principal objective of this Committee is that of preserving a proper relationship between the medical profession and the hospitals in the State. When policies are formulated and enforced by a hospital, which in the opinion of the Committee constitute a violation of the ethical principle which should govern the relationship of a hospital to members of the medical profession and the public, it shall be its duty to bring the matter to the attention of the medical profession and to take such other steps as are deemed necessary and appropriate to correct the practice.

The Committee is charged with the duty of recommending legislation on the subject to the House of Delegates should such a step be considered advisable.

**Sec. 10.** The Grievance Committee's duties shall be to act as a body to hear any complaints that are registered by patients against any physician at whose hands he thinks he has suffered an injustice. This Committee shall consist of three members—one from each Grand Division of the State. The Committee will be composed of the last three surviving Ex-Presidents. The Ex-president which has served on the Committee for the two previous years will serve as Chairman during the third year of his term on the Committee.

**Sec. 11.** The Advisory Committee to the State Department of Public Welfare shall consist of five members to be appointed by the Board of Trustees for a term of five years, provided, that the first appointments shall be for the following terms: one member for one year; one member for two years; one member for three years; one member for four

years; and one member for five years—all subsequent appointments to be for a term of five years.

The Committee shall (1) assist the Department of Public Welfare formulate policies which concern the relationship of the Department to the medical profession; (2) assist in determining disability for public assistance programs of the Department and other medical problems related to public assistance; and (3) advise the commissioner on the medical aspects of other departmental projects or problems.

The Committee, through its Chairman, shall make an annual report of its activities to the House of Delegates.

**Sec. 12.** The Public Service Committee—This Committee shall be appointed by the Board of Trustees and shall consist of one representative from each Councilor District and six members from the state-at-large, two members being appointed from each grand division.

It shall be the duty of the Public Service Committee to enlighten and direct public opinion in regard to the problems of health and medical care, and the promotion of understanding between the public and the medical profession.

This Committee shall have a full-time Secretary who will be the Public Service Director and who shall be a member of the Central Office staff. He shall be responsible for the conduct of the activities of the Committee throughout the State and he will assist with the other field services of the Association.

The Public Service Director shall be employed or removed without assignment of cause by the Board of Trustees upon recommendation of the Public Service Committee. His salary shall be determined by the Board of Trustees.

The Public Service Committee shall submit to the Board of Trustees annually a proposed budget.

**Sec. 13.** Rural Health Committee—The Rural Health Committee shall be appointed by the Board of Trustees. The Chairman shall be appointed by the Board of Trustees.

The duties of the Rural Health Committee shall be to promote the improvement of health standards in rural areas of Tennessee.

**Sec. 14.** The Prepaid Health Insurance Committee—This Committee shall be composed of such members, lay and medical, as deemed necessary by the Board of Trustees. A chairman shall be designated by the Board of Trustees.

The duties of the Prepaid Health Insurance Committee shall be the perpetual study and investigation of the problems of prepaid health insurance.

**Sec. 15.** The Committee on Tennessee Medical Foundation shall consist of nine members to be appointed by the Board of Trustees, the members to serve terms of three years each, with three members to be appointed each year; that the first appointments shall be made for the following terms: three members for three years; three members for two years and three members for one year, with all subsequent appointments to be for terms of three years.

The Committee shall formulate the policies and determine the program of the Tennessee Medical Foundation. It shall have the general management and control of the activities of the Foundation. The Committee, through its chairman, shall make an annual report to the House of Delegates.

At all meetings of the Committee, five members shall constitute a quorum for the transaction of business.

The Chairman of the Committee shall be appointed by the Board of Trustees.

The duties of the Committee shall be to study the problems involved with medical care in rural and isolated areas and to assist in providing medical care to such areas.

The Committee on Tennessee Medical Foundation may establish such subordinate committees as necessary to conduct the business of the Foundation. The Committee on Tennessee Medical Foundation shall also constitute the members of the Board of Directors of the Tennessee Medical Foundation.

## CHAPTER IX

### Assessments and Expenditures

**Section 1.** The annual dues shall be determined by the House of Delegates and shall be levied per capita on the active members of the chartered component societies. The annual dues shall be payable on January 1 of the year for which they are levied, but any component society reporting dues to the Tennessee State Medical Association shall be considered delinquent if payment of dues are not made by July 1 of the year for which they are levied. The secretary of each component society shall cause to be collected and shall forward to the offices of the State Association, the dues for its members. Any member whose name has not been reported for enrollment and whose dues for the current year have not been remitted to the secretary of the State Association on or before July 1 of the year for which they are levied shall stand delinquent until his name is properly reported and his dues for the current year properly remitted. Every active member of the Association shall receive the Journal without cost.

**Sec. 2.** A new member joining the Association for the first time and who is so reported after July 1 of a given year, shall pay one half of the annual dues for that year only.

**Sec. 3.** The Honorary Members of any component medical society are exempt from payment of dues, but a complete list of their names, certified by the respective component medical society, will be kept in the Headquarters Office of the Tennessee State Medical Association. Likewise, a component medical society is required to report a list of its Veteran Members who have been elected by that society and the Journal will be furnished to Veteran Members without cost.

**Sec. 4.** The secretary or treasurer of each component society shall forward a roster of all officers, membership, a list of delegates to the House of Delegates of the Tennessee State Medical Association, together with a list of non-affiliated



physicians of the county if practical, and also a list of members who have died during the year, to the Executive Director of this Association thirty days in advance of the annual meeting.

**Sec. 5.** The record of payment of dues on file in the offices of the Tennessee State Medical Association shall be final as to the fact of payment by a member of the Association.

## **CHAPTER X**

### **Rules of Conduct**

The Principles set forth in the Code of Ethics of the American Medical Association shall govern the conduct of members in their relations to each other and to the public.

## **CHAPTER XI**

The deliberations of this Association shall be governed by parliamentary usage as contained in Robert's "Rules of Order."

## **CHAPTER XII**

### **Component Societies**

**Section 1.** All Component Societies now in affiliation with the State Association, or those that may hereafter be organized in this State, which have adopted principles of organization not in conflict with this Constitution and By-Laws, may, upon application to the House of Delegates, receive a charter from and become a component part of this Association.

**Sec. 2.** Charters shall be issued only upon approval of the House of Delegates, and shall be signed by the President and Secretary of this Association. The House of Delegates shall have authority to revoke the charter of any component Society, whose actions are in conflict with the letter or spirit of this Constitution and By-Laws, or the code of ethics of the American Medical Association upon recommendation of the Council.

**Sec. 3.** Each component Society shall judge of the qualifications of its own members; but as such Societies are the only portals to this Association, and to the American Medical Association. Every reputable and legally registered physician, who is practicing or who will agree to practice nonsectarian medicine, shall be entitled to membership. Each component Society of this Association may amend its constitution and/or by-laws to provide that the payment of dues to the American Medical Association shall be a condition of active membership in that society. Before a charter is issued to any component Society, full and ample notice and opportunity shall be given to every such physician in the County to become a member.

**Sec. 4.** Only one component Medical Society shall be chartered in any County. When more than one County Society exists, friendly overtures and concessions shall be made, with the aid of the Councilor for the District, if necessary, and all of the members brought into one organization. In case of failure to unite, an appeal may be made to the Council, which shall decide what action shall be taken.

**Sec. 5.** Any physician who may feel aggrieved by the action of the Society in his County in refusing him membership, or in suspending or expelling him, shall have the right to appeal to the Council.

**Sec. 6.** In hearing appeals, the Council may admit oral or written evidence, as in its judgment will best and more fairly present the facts, but in the case of every appeal, both as a board and as individual Councilors in district and county work, efforts at conciliation and compromise should precede all such hearings.

**Sec. 7.** When a Member in good standing in a component Society moves to another County in the State, his name, upon request, and with the consent of his component Society, shall be transferred, without cost, to the roster of the component Society in whose jurisdiction he moves, but he shall not hold membership in more than one component Society.

**Sec. 8.** A physician living on or near a County line may hold his membership in that County most convenient for him to attend, on permission of the Society in whose jurisdiction he resides, and with consent of his Councilor.

**Sec. 9.** Each component Society shall have general direction of the affairs of the profession in the County or Counties and its influence shall be constantly exerted for bettering the scientific, moral, and material condition of every physician in the County; and systematic effort shall be made by each member, and by the Society, as a whole, to increase the membership until it embraces every qualified physician in the County.

**Sec. 10.** Frequent meetings shall be encouraged and the most attractive programs arranged that are possible. The younger members shall be especially encouraged to do postgraduate and original research work and to give the Society the benefits of such labors. Official position and other preferments should be unstintingly given to such members.

**Sec. 11.** At some meetings in advance of the annual Meeting of this Association, each component Society shall elect a Delegate or Delegates to represent it in the House of Delegates of this Association, in the proportion of one Delegate and one alternate to each fifty members or fraction thereof; and the Secretary of the Society shall send a list of such Delegates to the Secretary of this Association *on or before January 1 preceding the Annual Meeting.*

**Sec. 12.** The Secretary of each component Society shall keep a roster of its members and shall furnish an official report of the membership to the Secretary of this Association at least once each year and oftener if circumstances as to membership may require. The Secretary shall note any changes in the personnel of the membership, with special reference to changes due to death and removal from the district.

## **CHAPTER XIII**

### **Amendments**

In order to amend the by-laws of this Association, a two-thirds majority of the members of the House of Delegates present and voting shall be necessary. Such amendment, after having been filed in writing, shall lie over one day. Any by-law may be suspended during the pending meeting by unanimous consent.

## OFFICERS OF THE TENNESSEE STATE MEDICAL ASSOCIATION, 1962-63

**President**—Wm. J. Sheridan, M.D., Medical Arts Building, Chattanooga  
**President-Elect**—Bland W. Cannon, M.D., 20 S. Dudley Street, Memphis  
**Vice-President**—J. W. Erwin, M.D., Health Dept., Blountville  
**Vice-President**—Robert F. Baker, M.D., Sparta  
**Vice-President**—Oscar M. McCallum, M.D., Henderson  
**Secretary-Editor**—R. H. Kampmeier, M.D., 8210 Vanderbilt Hospital, Nashville  
**Executive Director**—Mr. J. E. Ballentine, 112 Louise Avenue, Nashville 5

**BOARD OF TRUSTEES**  
 \*Robert M. Finks, M.D., Chairman and Treasurer (1964) 2122 West End Avenue, Nashville  
 J. Malcolm Aste, M.D., (1963) 188 South Bellevue, Memphis  
 G. H. Berryhill, M.D., (1963) 616 West Forest Avenue, Jackson  
 \*John H. Burkhardt, M.D., (1963) 3000 No. Broadway, Knoxville  
 \*Bland W. Cannon, M.D., (1965) 20 South Dudley Street, Memphis  
 Carl C. Gardner, Jr., M.D., (1963) 815 South Garden Street, Columbia

Joseph W. Johnson, Jr., M.D., (1965) Interstate Building, Chattanooga  
 \*R. H. Kampmeier, M.D., (1963) Vanderbilt Hospital, Nashville  
 Henry B. Gotten, M.D., (1963) 1412 Madison Avenue, Memphis  
 William J. Sheridan, M.D., (1964) Medical Arts Building, Chattanooga  
 \*W. O. Vaughan, M.D., (1963) 2103 Hayes St., Nashville

**SPEAKER OF THE HOUSE**  
 J. Malcolm Aste, M.D., 188 South Bellevue, Memphis  
**Vice-Speaker**—Tom E. Nesbitt, M.D., 1921 Hayes Street, Nashville

**COUNCILORS**  
**First District**—J. O. Hale, M.D., 401 North Boone St., Johnson City (1964)  
**Second District**—B. M. Overholt, M.D., 717 Cumberland Ave., S.W., Knoxville (1963)  
**Third District**—M. F. Langston, M.D., 103 Palisades, Signal Mountain (1964)  
**Fourth District**—Thurman Shipley, M.D., 135 W. 2nd St., Cookeville (1963)  
**Fifth District**—Coulter S. Young, M.D., Manchester (1964)  
**Sixth District**—Laurence A. Grossman, M.D., 1816 Hayes Street, Nashville (1963)

**Seventh District**—Wm. K. Owen, M.D., Pulaski (1964)  
**Eighth District**—Frank A. Moore, M.D., Jackson Clinic, Jackson (1963)  
**Ninth District**—R. David Taylor, M.D., 620 Main Street, Dyersburg (1964)  
**Tenth District**—Francis H. Cole, M.D., 188 South Bellevue Blvd., Memphis (1963)

**DELEGATES TO THE AMA**  
 Alvin J. Ingram, M.D., 869 Madison Avenue, Memphis (1963)  
 Chas. C. Smeltzer, M.D., 521 W. Cumberland Avenue, Knoxville (1964)  
 Daugh W. Smith, M.D., 1926 Hayes Street, Nashville (1963)

**Alternates**—  
 Julian K. Welch, Jr., M.D., Brownsville (1963)  
 Wm. J. Sheridan, M.D., Medical Arts Building, Chattanooga (1964)  
 Thomas F. Frist, M.D., 2104 West End Avenue, Nashville (1963)

\*(Members of Executive Committee of Board of Trustees)

## PRESIDENTS AND SECRETARIES OF COUNTY MEDICAL SOCIETIES, 1962-63

**COUNTY**  
**Bedford County**  
**Benton-Humphreys County**

**Blount County**  
**Bradley County**  
**Campbell County**  
**Chattanooga-Hamilton County**

**Cocke County**  
**Coffee County**  
**Consolidated Medical Assembly of West Tennessee**  
**Cumberland County**  
**Nashville Academy of Medicine**  
**Davidson County**

**Dickson County**  
**Fentress County**  
**Franklin County**  
**Giles County**

**Greene County**  
**Hamblen County**

**Hawkins County**  
**Henry County**

**Hickman-Perry County**  
**Jackson County**  
**Knoxville Academy of Medicine**

**Lauderdale County**  
**Lawrence County**  
**Lincoln County**

**Macon County**  
**Marshall County**

**Maury County**  
**McMinn County**  
**Memphis-Shelby County**

**Monroe County**  
**Montgomery County**

**Northwest Tennessee Academy of Medicine**  
**Overton County**  
**Putnam County**

**Roane-Anderson County**

**Robertson County**

**Rutherford County**

**Scott County**  
**Sevier County**  
**Smith County**  
**Sullivan-Johnson County**

**Sumner County**  
**Tipton County**  
**Warren County**

**Washington-Carter-Unicoi County**  
**Weakley County**  
**White County**

**Williamson County**  
**Wilson County**

**PRESIDENTS**  
 Wallace Frierson, M.D., Shelbyville  
 Jas. J. Lawson, M.D., Box 629, New Johnsonville  
 Edward M. Kelman, M.D., Blount Memorial Hospital, Maryville  
 Cecil H. Kimball, M.D., 2200 Harris Circle, N.W., Cleveland  
 Jas. W. Riggs, M.D., LaFollette  
 Edward G. Johnson, M.D., 711 Medical Arts Building, Chattanooga

W. E. McGaha, M.D., Newport  
 Bruce E. Galbraith, M.D., Tullahoma  
 David E. Stewart, M.D., Brownsville  
 Steuart Seaton, M.D., Crossville  
 Joseph M. Ivie, M.D., Medical Arts Building, Nashville

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 Guy C. Pinckley, M.D., Jamestown  
 A. Reynolds Fite, M.D., Winchester  
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 Estle P. Muney, M.D., Jefferson City

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 W. G. Rhea, M.D., Dunlap Street, Paris

Bert L. Holladay, M.D., Linden  
 L. R. Dudley, M.D., Gainesboro  
 H. Dewey Peters, M.D., 514 Church Avenue, S.W., Knoxville

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 L. B. Molloy, M.D., Lawrenceburg  
 F. H. Booher, M.D., Lynchburg

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Kenneth Frye, M.D., Etowah  
 A. J. Ingram, M.D., 869 Madison Avenue, Memphis

H. M. McGuire, M.D., Madisonville  
 S. N. Doane, Jr., M.D., 320 South Third Street, Clarksville

Jack Holifield, M.D., Tiptonville

M. E. Clark, M.D., Livingston  
 C. A. Collins, M.D., Monterey

C. Julian Ragan, M.D., Doctors Building, Oak Ridge

John S. Freeman, M.D., Bell Building, Springfield

Matt B. Murfree, M.D., 103 N. Spring, Murfreesboro

Milford Thompson, M.D., Oneida  
 Ralph H. Shilling, M.D., Gatlinburg

E. K. Bratton, M.D., Hartsville  
 R. T. Strang, M.D., 120 W. Ravine Rd., Kingsport

James T. Ladd, M.D., Portland  
 N. L. Hyatt, M.D., Covington

J. F. Fisher, M.D., 210 Colville St., McMinnville

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Wm. F. Encke, M.D., Franklin  
 J. H. Tilley, M.D., Martha Gaston Hospital, Lebanon

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 Henry Feldhouse, M.D., Shelbyville  
 Hiram C. Capps, M.D., Waverly

Oliver K. Agee, M.D., 139 S. Hall Road, Alcoa

Robert H. Allen, M.D., 420 Central Ave., N.W., Cleveland

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Mrs. Flo Richardson, 109 Medical Arts Building, Chattanooga—Executive Secretary

R. B. McMahan, M.D., Newport  
 L. G. Gardner, M.D., Manchester

George B. Wyatt, M.D., 686 W. Forest Avenue, Jackson

Jas. T. Callis, M.D., Crossville  
 Tom E. Nesbitt, M.D., 1921 Hayes Street, Nashville

Mr. Jack Drury, 112 Louise Avenue, Nashville—Executive Secretary

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 B. F. Allred, M.D., Jamestown

George L. Smith, M.D., Winchester  
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 R. G. Fish, M.D., Commercial Bank Bldg., Paris

Parker D. Elrod, M.D., Centerville  
 J. S. Johnson, M.D., Gainesboro

Ray J. Leffler, M.D., Baptist Hospital, Knoxville

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 Malcolm H. Weathers, Jr., M.D., Loretto

Anne U. Bolner, M.D., 204 N. Main, Fayetteville

J. D. Lane, M.D., Lafayette  
 K. J. Phelps, M.D., Lewisburg

W. N. Jernigan, M.D., 209 W. 8th Street, Columbia

R. D. Hays, M.D., 201 W. Washington, Athens

Robert P. McBurney, M.D., 899 Madison Avenue, Memphis

Mr. Leslie Adams, 774 Adams Street, Memphis—Executive Secretary

Jas. H. Barnes, M.D., Sweetwater  
 F. C. Petty, M.D., Memorial Hospital, X-Ray Dept., Clarksville

Edward B. Smythe, M.D., Tiptonville

W. G. Quarles, M.D., Livingston  
 Thurman Shipley, M.D., 135 W. 2nd St., Cookeville

Harvey Keese, Jr., M.D., Medical Arts Building, Oak Ridge

W. P. Stone, M.D., 7th & Garner, Springfield

Richard E. Green, M.D., 220 E. College Street, Murfreesboro

M. F. Frazier, M.D., Oneida  
 Charles L. Roach, M.D., Sevierville  
 David G. Petty, M.D., Carthage  
 Elmer Greene, M.D., Eastman Corporation, Kingsport  
 Charles M. Gillett, M.D., Hendersonville  
 J. D. Witherington, M.D., Covington  
 W. B. Bigbee, M.D., 205 Montgomery Building, McMinnville  
 N. E. Hyder, M.D., Erwin

E. H. Welles, M.D., Dresden  
 Donald H. Bradley, M.D., 233 E. Broadway, Sparta  
 Joseph L. Willoughby, M.D., Franklin  
 T. R. Puryear, M.D., 239 E. Main, Lebanon



# TENNESSEE STATE MEDICAL ASSOCIATION 1962-1963 STANDING COMMITTEES

**Committee on Scientific Work**—R. H. Kampmeier, Chairman, Nashville; J. Sumpter Anderson, Jr., Nashville; Jean M. Hawkes, Memphis; J. W. Erwin, Blountville; W. David Dunavant, Memphis; W. W. Wilson, Old Hickory; Elton E. Shouse, Jr., Knoxville; Fred B. Ballard, Jr., Chattanooga; John H. Burkhart, Knoxville; Robert P. McBurney, Memphis; James W. Culbertson, Memphis.

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## The Ecology of Medical Graduates\*

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*The authors have provided answers to questions raised not infrequently—questions which, in the absence of positive data, are too often answered by speculation or guesses. State schools especially, and those who vote their financial support, must recognize that a state's borders will not materially hinder the movement of physicians in selecting a place of practice.*

Where do the graduates of a medical school go and what do they do after completing their medical education? How many are in general practice? How many have become specialists? How many are in residency training? How many are in other fields such as Federal or State service, the Armed Forces, teaching and research, or industrial medicine?

In an attempt to answer these questions, so far as The University of Tennessee College of Medicine graduates are concerned, we have sent a short questionnaire to those who had graduated in the ten year period from 1950 through 1959. There were 1,596 questionnaires sent out and 1,259 were returned, a return rate of 78%; 1,239 of those returned carried complete data. The unreturned questionnaires were distributed randomly as to geographic area and year of graduation, and thus it was thought that they would not affect the percentage distributions to any significant degree.

The questionnaires were of the folding post-card type, and when completed the recipient had merely to tear off the questionnaire portion which was already addressed and stamped. The graduate was asked the following questions:

- (1) In what state are you now located?
- (2) In what year did you receive your degree of Doctor of Medicine?
- (3) Where did you take your internship?
- (4) In what hospital or hospitals did you take your residency, if any?
- (5) In what type of practice are you engaged—general, residency training, Armed Forces, or other State or Federal service or specialty?
- (6) If a specialist, in what specialty are you engaged?
- (7) If a specialist, are you board certified or board eligible?
- (8) If you were not classified as a resident of Tennessee when you entered the College of Medicine, of what state were you a resident?
- (9) If in the Armed Forces or in residency training, in what state do you expect to practice?

The data were tabulated as to whether the graduate was a resident of Tennessee at the time of registration in the College of Medicine or was a resident of another state. Those graduates who were residents of Tennessee at the time of registration are referred to as "In-State" (I.S.) and the non-residents are referred to as "Out-of-State" (O.S.).

Table 1 shows the data classified as to "I.S." or "O.S." status, state of present location and type of practice in which the graduate is engaged.

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Table 1

DISTRIBUTION OF 1239 GRADUATES OF THE UNIVERSITY OF TENNESSEE COLLEGE OF MEDICINE BY STATE OF LOCATION AND TYPE OF PRACTICE BY "IN-STATE" (I.S.) AND "OUT-OF-STATE" (O.S.) GRADUATES.

| State of Location | Gen. Pract. |      | Specialty |      | Residency |      | Totals |      | Grand Total |
|-------------------|-------------|------|-----------|------|-----------|------|--------|------|-------------|
|                   | I.S.        | O.S. | I.S.      | O.S. | I.S.      | O.S. | I.S.   | O.S. |             |
| Alabama           | 13          | 6    | 11        | 6    | 2         | 2    | 26     | 14   | 40          |
| Arizona           | 4           | 2    | 0         | 1    | 0         | 0    | 4      | 3    | 7           |
| Arkansas          | 7           | 10   | 1         | 1    | 1         | 0    | 9      | 11   | 20          |
| California        | 6           | 4    | 9         | 6    | 4         | 2    | 19     | 12   | 31          |
| Colorado          | 0           | 3    | 1         | 0    | 4         | 2    | 5      | 5    | 10          |
| Florida           | 13          | 14   | 14        | 8    | 3         | 7    | 30     | 29   | 59          |
| Georgia           | 9           | 5    | 7         | 1    | 6         | 4    | 22     | 10   | 32          |
| Kentucky          | 19          | 4    | 6         | 1    | 2         | 1    | 27     | 6    | 33          |
| Louisiana         | 2           | 2    | 3         | 3    | 5         | 3    | 10     | 8    | 18          |
| Mississippi       | 4           | 58   | 10        | 4    | 0         | 3    | 14     | 65   | 79          |
| Missouri          | 3           | 5    | 6         | 0    | 4         | 0    | 13     | 5    | 18          |
| North Carolina    | 9           | 3    | 6         | 1    | 4         | 2    | 19     | 6    | 25          |
| South Carolina    | 3           | 2    | 4         | 0    | 3         | 0    | 10     | 2    | 12          |
| Oklahoma          | 1           | 4    | 1         | 2    | 0         | 1    | 2      | 7    | 9           |
| Tennessee         | 225         | 11   | 161       | 8    | 117       | 24   | 503    | 43   | 546         |
| Texas             | 7           | 8    | 13        | 3    | 9         | 5    | 29     | 16   | 45          |
| Others            | 15          | 8    | 29        | 10   | 37        | 24   | 81     | 42   | 123         |
| Totals            | 340         | 149  | 282       | 55   | 201       | 80   | 823    | 284  | 1107        |

| Other Practice |      | Armed Forces |      | Specialists in Armed Forces |      | Total |      | Total |
|----------------|------|--------------|------|-----------------------------|------|-------|------|-------|
| I.S.           | O.S. | I.S.         | O.S. | I.S.                        | O.S. | I.S.  | O.S. |       |
| 17             | 10   | 53           | 18   | 31                          | 3    | 101   | 31   | 132   |
| Grand Total    |      |              |      |                             |      |       |      | 1239  |

There are 340 of the "I.S." and 149 of the "O.S." graduates engaged in general practice. Excluding those who are in residency training and the Armed Forces, these numbers represent 53.2% of the "I.S." and 69.6% of the "O.S." graduates respectively. This difference of 17.3% is statistically significant.

Table 1 also shows that 225 or 66% of the "I.S." graduates in general practice have located in Tennessee, and 7.4% of the "O.S." graduates have located in Tennessee for general practice. There were 161 or 57% of the "I.S." graduates who returned to Tennessee to practice their specialty. Excluding those in the Armed Forces and in residency training, there were 19 or 9.2% of the "O.S." graduates who have returned to Tennessee.

There are those who claim that The University of Tennessee is wasting time and money by training students from other states, since only about 10% return to Tennessee. This is a fallacious argument because other states and other schools educate students who practice in Tennessee. For example, 44% of the certified specialists in internal medicine and 32% of the certified surgeons in Tennessee are from other states and from schools other than those in Ten-

nessee. The University of Tennessee graduated 27.5% of the general surgeons in Tennessee and Vanderbilt graduated 27.5 per cent. Schools outside of Tennessee provided 45% of the surgeons, 32% from non-Tennessee residents and 13% from Tennessee students. These data are shown in table 2. Thus it is seen that 45% of the specialists in internal medicine and general surgery are from other states and other schools.

Table 2

DISTRIBUTION OF 283 SPECIALISTS (INTERNAL MEDICINE AND GENERAL SURGERY) IN PRACTICE IN TENNESSEE BY SCHOOL OF GRADUATION

| Resident Status | Graduating from Univ. |       |            |       |        |       | Total |
|-----------------|-----------------------|-------|------------|-------|--------|-------|-------|
|                 | of Tenn.              |       | Vanderbilt |       | Others |       |       |
|                 | No.                   | %     | No.        | %     | No.    | %     |       |
| Tennessee       | 50                    | 63    | 42         | 64    | 30     | 21.0  | 122   |
| Non-Tennessee   | 29                    | 37    | 23         | 36    | 109    | 79.0  | 161   |
| Total           | 79                    | 100.0 | 65         | 100.0 | 139    | 100.0 | 283   |

This pattern is followed by residents of other states who are educated in The University of Tennessee. Table 3 shows that 61.7% of those in general practice and 36.4% of specialists returned to their home state to practice. A significantly higher percentage of specialists of Tennessee origin remain in Tennessee than of specialists who

return to their own state. There is no statistical significant difference in the percentage of general practitioners who return to their home state to practice.

With reference to specialists returning to their home state, it is to be noted that the difference is *statistically* significant and too much weight should not be assigned to differences between samples when one sample is much larger than the other. However,

graduates are too few for statistical significance but these three states took 26 or 17% of the "O.S." general practitioners and 30% of the "O.S." specialists. Of course, these states contributed some of the "O.S." graduates.

Table 4 shows the data concerning numbers of graduates from certain states and the numbers who located in those states. This table shows only those states which

Table 3

DISTRIBUTION OF 826 GRADUATES OF THE UNIVERSITY OF TENNESSEE BY RESIDENT STATES AT TIME OF GRADUATION AND BY RETURNS TO HOME STATE FOR PRACTICE, AND TYPE OF PRACTICE

| Type of Practice | In-State Graduates |      | Out-of-State Graduates |     | Returning to Home State |      |                  |      |
|------------------|--------------------|------|------------------------|-----|-------------------------|------|------------------|------|
|                  | No.                | %    | No.                    | %   | In-State No.            | %    | Out-of-State No. | %    |
| General          | 340                | 54.0 | 149                    | 73  | 225                     | 66.0 | 92               | 61.7 |
| Specialty        | 282                | 46.0 | 55                     | 27  | 161                     | 57.0 | 20               | 36.4 |
| Total            | * 622              | 100  | * 204                  | 100 | 386                     | 62.0 | 112              | 55.0 |

\*Does not include "other types of practice."

it may be assumed that the difference is not a chance difference. There are many factors which influence the place in which a specialist locates. A very important factor is the place of residency and since Tennessee has four metropolitan areas with approved residencies, it would be expected that a high proportion of Tennessee students would, at the conclusion of their residency training, locate in Tennessee.

Table 1 brings out some other interesting facts. It shows that the three states of California, Texas and Florida took 105 or 12.7% of graduates in actual practice, 7.7% of the "I.S." graduates in general practice and 12.4% of the specialists. The data for "O.S."

received more graduates than they sent. Colorado received 10 and sent none. California was next, having sent 2 students and receiving 31. The three states of California, Texas and Florida sent 40 students and received 138, a ratio of 3.4 to 1. Louisiana did not suffer unduly in that 2 students came from that state and 18 graduates located there, a ratio of 9 to 1.

A condensed form of table 1 is given in table 5.

Table 5

DISTRIBUTION OF 1,239 GRADUATES OF THE UNIVERSITY OF TENNESSEE COLLEGE OF MEDICINE BY TYPE OF PRACTICE, NUMBERS AND PERCENTAGES OF "IN-STATE" AND "OUT-OF-STATE" GRADUATES

| Type of Practice | In-State |      | Out-of-State |       | Total |      |
|------------------|----------|------|--------------|-------|-------|------|
|                  | No.      | %    | No.          | %     | No.   | %    |
| General          | 340      | 36.8 | 149          | 47.3  | 489   | 38.7 |
| Specialty*       | 313      | 33.8 | 58           | 18.4  | 371   | 30.0 |
| Residency        | 201      | 21.7 | 80           | 25.4  | 281   | 22.8 |
| Armed Forces     | 53       | 5.7  | 18           | 5.7   | 71    | 5.7  |
| Other            | 17       | 1.9  | 10           | 3.2   | 27    | 2.6  |
| Total            | 924      | 99.9 | 315          | 100.0 | 1,239 | 99.8 |

\*Includes Armed Forces Specialists.

Table 4

SHOWS STATES WITH HIGHER RETURNS IN GRADUATES THAN NUMBER SENT TO THE UNIVERSITY OF TENNESSEE COLLEGE OF MEDICINE

| State        | Number Students Sent | Number Graduates in State | Ratio    |
|--------------|----------------------|---------------------------|----------|
| Colorado     | 0                    | 10                        | *        |
| California   | 2                    | 31                        | 15 to 1  |
| Louisiana    | 2                    | 18                        | 9 to 1   |
| Texas        | 8                    | 45                        | 5.7 to 1 |
| Alabama      | 10                   | 40                        | 4 to 1   |
| Georgia      | 10                   | 32                        | 3.2 to 1 |
| No. Carolina | 8                    | 25                        | 3 to 1   |
| Kentucky     | 15                   | 33                        | 2.2 to 1 |
| Florida      | 30                   | 62                        | 2 to 1   |
| Arizona      | 5                    | 7                         | 1.4 to 1 |

\*No ratio 0 to 10

What influences the graduates of a medical school to locate in certain areas? One of the most important facts, insofar as specialists are concerned, has to do with the place of residency. This is shown in table 6. It is seen that 45% of both the "I.S." and the "O.S." graduates who are specialists



Table 6

DISTRIBUTION OF RANDOM SAMPLE OF 175 SPECIALISTS WITH REFERENCE TO THE AREA OF PRACTICE AS RELATED TO HOSPITAL OF RESIDENCY. ("SAME AREA" IS AREA WITHIN 150 TO 200 MILES OF HOSPITAL.)

|   | In-State Graduates |      | Out-of-State Graduates |      | Total |      |
|---|--------------------|------|------------------------|------|-------|------|
|   | No.                | %    | No.                    | %    | No.   | %    |
| Number practicing in same area as hospital of residency | 57                 | 45.0 | 23                     | 45.0 | 80    | 45.6 |
| Number not in same area as hospital of residency        | 67                 | 55.0 | 28                     | 55.0 | 95    | 54.4 |
| Totals  | 124                | 100  | 51                     | 100  | 175   | 100  |

are located in the area of the hospital of their residence. With reference to general practitioners, table 7 shows that about 47% of them are located in the area of the hospital where they took their internship. A significantly higher percentage of "O.S." graduates locate in the area of internship than do "I.S." graduates. The most probable explanation of this is that many of the "O.S." graduates (44 of the 149) in general practice had their internship in Memphis and located in Mississippi in areas close to Memphis. The same is true for 9 graduates locating in Arkansas and 3 locating in the southern area of Missouri, near Memphis.

Table 7

NUMBER AND PERCENTAGES OF I.S. AND O.S. GRADUATES IN GENERAL PRACTICE WITH GEOGRAPHIC REFERENCE TO HOSPITAL OF INTERNSHIP

|                | Total | In Practice in Area of Internship (Within 200 Miles) |          |
|----------------|-------|--|----------|
|                |       | Number   | Per Cent |
| I.S. Graduates | 340   | 133  | 39.0     |
| O.S. Graduates | 149   | 98   | 65.0     |
| Total          | 489   | 231  | 47.0     |

The smaller percentage of I.S. graduates locating within the area of the hospital of internship is explained by the fact that Tennessee is a very long state and many graduates from East Tennessee took their internship in Memphis and then went back to their home areas.

Table 8 shows that 32.8% of residents took their residency in the same hospital in which they took their internships and that 64, or 52% took residencies in the same city in which they took internships.

Table 8

DISTRIBUTION OF A RANDOM SAMPLE OF 125 RESIDENCIES BY HOSPITAL OF RESIDENCY AND HOSPITAL AND CITY OF INTERNSHIP

|                                     | I.S. |      | O.S. |      | Total |      |
|-------------------------------------|------|------|------|------|-------|------|
|                                     | No.  | %    | No.  | %    | No.   | %    |
| Residency in hospital of internship | 30   | 30.0 | 11   | 42.0 | 41    | 32.8 |
| Residency in another hospital       | 71   | 70.0 | 13   | 58.0 | 84    | 67.2 |
| Residency in city of internship     | *18  | —    | *5   | —    | *23   | —    |
| Total                               | 101  | 100  | 24   | 100  | 125   | 100  |

\*Included in 2nd category.

Which specialties attract graduates of The University of Tennessee College of Medicine? The 361 graduates who are in specialty practice are distributed as shown in table 9. In no area was there a statistically significant difference between I.S. graduates and O.S. graduates as to the proportion which enters each specialty.

There were 21 full-time faculty members among those in specialty practice—7 in pediatrics, 6 in radiology, 4 in pathology, 3 in obstetrics and gynecology and 1 in orthopedic surgery.

Table 9

DISTRIBUTION OF GRADUATES BY TYPE OF SPECIALTY

| Type of Specialty       | In-State Graduates |      | Out-of-State Graduates |       |
|-------------------------|--------------------|------|------------------------|-------|
|                         | No.                | %    | No.                    | %     |
| Internal Medicine       | 50                 | 15.8 | 11                     | 18.0  |
| *General Surgery        | 47                 | 14.8 | 3                      | 5.0   |
| Pediatrics              | 45                 | 13.7 | 10                     | 16.4  |
| Obstetrics & Gynecology | 43                 | 13.0 | 6                      | 9.9   |
| Radiology               | 31                 | 9.8  | 7                      | 11.5  |
| Anesthesiology          | 26                 | 8.2  | 5                      | 8.2   |
| Orthopedics             | 17                 | 5.4  | 4                      | 6.5   |
| Psychiatry              | 11                 | 3.5  | 3                      | 4.9   |
| Ophthalmology           | 11                 | 3.5  | 2                      | 3.2   |
| Pathology               | 8                  | 2.5  | 4                      | 6.6   |
| Neurosurgery            | 7                  | 2.2  | 0                      | 0     |
| Urology                 | 6                  | 1.9  | 4                      | 6.6   |
| ENT                     | 7                  | 2.2  | 1                      | 1.6   |
| Public Health           | 4                  | 1.3  | 1                      | 1.6   |
| Dermatology             | 4                  | 1.3  | 0                      | 0     |
| Totals                  | **317              | 99.1 | 61                     | 100.0 |

\*Includes thoracic surgery.

\*\*Discrepancy between this table and table 1 results from the fact that 3 gave their specialties but omitted state of location.

### Summary

This study may be summarized as follows:

(1) Of the graduates who are in actual practice, 52.3% of the "In-State" and 69.6% of the "Out-of-State" graduates are in gen-

eral practice. This difference is statistically significant.

(2) Of the graduates in general practice, 66% of the "In-State" and 7.4% of the "Out-of-State" graduates are located in Tennessee.

(3) Of those in specialty practice, 57% of the "In-State" and 14% of the "Out-of-State" graduates are located in Tennessee.

(4) Excluding the Armed Services and residencies, 9.2% of the "Out-of-State" graduates are located in Tennessee.

(5) Forty-four per cent of certified internists and 32% of certified surgeons in

Tennessee are from other states and from schools other than schools in Tennessee.

(6) Of the "Out-of-State" graduates in general practice, 61.7% returned to their home states. Of those in specialty practice, 36.4% returned to their home states.

(7) "In-State" graduates of The University of Tennessee who leave Tennessee tend to go to California, Texas and Florida.

(8) Probably the greatest single factor influencing location of practice is the place of internship or residency. Approximately 45% of graduates who are in practice are located in the area of the hospital in which they receive their training.

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**DIASTOLIC HYPERTENSION AND CHRONIC PROTEINURIA.** By S. Edward King, M.D., *Am. J. Cardiology*, 9:669, 1962.

Six hundred twenty-three young proteinuric males (mean age 26 years) were re-examined at intervals of 5 to 10 years (average 6 years). Follow-up studies from patients with orthostatic and asymptomatic proteinuria indicate that these findings are no exceptions to the rule that continued proteinuria signifies chronic renal disease. Despite the deceptively benign initial clinical picture, proteinuria was found to persist or increase in a great majority of these patients and a considerable number, at some time, presented other clinical evidence of organic renal disease. His observations were confirmed by current biopsy studies.

Glomerular lesions reminiscent of subsiding acute and chronic membranous glomerulonephritis and others of a more subtle and focal nature, have been reported in patients with relatively early, fixed, orthostatic proteinuria. More advanced renal disease may be anticipated in patients with protracted chronic orthostatic proteinuria and particularly in those patients in whom an increasing and continuous proteinuria develops.

The aging factor is excluded in this study which was limited to young persons under 30 years of age. Causal relationship between chronic pyelonephritis and hypertension in older age groups becomes obscured by customary elevations in blood pressure.

The observations summarized in this article suggest that chronic pyelonephritis with or without congenital renal malformations and occlusive renal vascular disease, is a major disorder leading to renal hypertension.

A high incidence of diastolic hypertension, several times greater than anticipated in the age group, developed in this series of 623 male subjects with prior chronic orthostatic and asymptomatic proteinuria. The incidence of diastolic hypertension parallels the degree of renal damage indicated by proteinuria and other criteria of renal function and disease. In the study of the individual patient, the hypertension was attributed to that of renal cause. Chronic pyelonephritis was detectable with increasing frequency with progressing renal injury and hypertension and a direct causal relationship between renal infection and hypertension in those instances, is probable. Renal infection may be initially present as unapparent chronic pyelonephritis or later superimposed upon various latent renal diseases and malformations initially manifested by variable proteinuria.

In this study, unsuspected unilateral renal abnormalities and obstructive lesions were discovered incidentally by routine excretory urography in approximately 15% of these patients. Hypertension, directly or indirectly induced by these lesions, is considered potentially curable. (Abstracted for the Middle Tennessee Heart Association by Marvin J. Rosenblum, M.D., Nashville.)



This paper deals with the problems encountered in everyday office practice and usually fall into the purview of the family physician. He, then, will find this both interesting and profitable reading.

## Psychophysiologic Disorders\*

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Since emotions and personality enter into the total responses of human beings to stress, it is not surprising that there has been a tendency for psychiatrists to look on all illness as "psychosomatic." It would be somewhat more fair to our colleagues if we in psychiatry were to see primary emotional problems as in part somatopsychic. Certainly there is no individual who is not affected simultaneously by his physical make-up and current physical and emotional stresses. In this discussion we are concerned with a more limited area.

What then are the psychophysiologic disorders? They are those physical disorders in which psychological factors play a significant part in the precipitation of disease or continued dysfunction. Dependent on the stage of illness there may be only functional physiologic change demonstrable, there may be temporary organic change, or there may be irreversible organic change. These disorders may best be considered as a result of autonomic changes due to the presence of acute or chronic emotional states with resultant physiologic responses.

We think of psychosomatic concepts as being of recent origin, and it is true that the term has been in use for some mere 25 years or so. The idea that emotions influence physiologic function is not, however, a new one. The effect of fear on the viscera of Homer's heroes is not far different from those effects we see ourselves in present day stresses. This awareness has been reflected in poetry and fiction by many writers since his time. Medically, in 1833, Dr. Beaumont describing the changes seen in his patient, Alexis St. Martin, produced evidence of changes in digestive processes

associated with varying emotional states. During the mid-19th century, however, medicine in general and psychiatry as well became increasingly concerned with the search for specific anatomic changes as a cause for disease. The ideas of "specific etiology equals specific disease," as promulgated by Virchow, further accented the desire to find some specific anatomic cause for each illness. Fortunately, during this period, the good physician, then as now, remained responsive to the emotional states of his patient even though he did not always become fully aware of this responsiveness himself. In fact he might have been somewhat ashamed of it if he had. The return of psychiatry to consideration of emotional factors in neurotic and psychotic illness did not, unfortunately, bridge this gap.

The psychoanalytic theories of Freud, while of great help in dealing with the neurotic, tended to deal with emotional factors and illness as really somewhat unrelated to medicine. One result of this thinking was Freud's expressed feeling that the lay analyst might wholly replace the analytically or psychotherapeutically trained physician. Such thinking necessarily presumed a dichotomy between the physical and psychological functions of the individual. The realities of clinical experience, however, over the years forced psychiatry to reconsider this position, and concern for the physiologic responses to emotion became increasingly evident during the mid-thirties. At the same time general practitioners and internists were driven by the same necessity to recognize the emotional factors accentuating and complicating symptoms in peptic ulcer, ulcerative colitis, and other conditions. During the second World War, these findings became increasingly recognized and more precisely delineated. The earlier work of Cannon in

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relation to adrenal medullary responses and the sympathetic nervous system was reviewed with somewhat more pressing interest and direct clinical application. The role of the autonomic nervous system became more clear. Its two general functions: to prepare the body to respond defensively to danger, and to maintain homeostasis through respiration, digestion, excretion, and vasomotor control became evident to the clinician as well as to the psychologist. Selye's investigations into the general stress phenomena and the multiple responses to stress added breadth to these concepts. All of these contributions pointed out clearly the existence of multiple causative factors in these conditions.

### Concepts of Psychophysiology

A brief discussion of neurophysiologic and neuroendocrine factors related to the sequence of emotional response—visceral dysfunction might be of help. The hypothalamus which has been known as a central area for endocrine and autonomic nervous system control now is accepted as a critical point in a circular system which mediates impulses concerned with emotion and the neuroendocrine activity as well. Thus, the hypothalamus probably exerts control over the anterior pituitary secretions via the vascular portal system. It also influences, and is influenced by the neocortex and limbic system as well as the reticular activating system and the various endocrine secretions. Certain of the limbic activities appear to be concerned with self-preservative functions and may effect the level of ACTH secretion. The more posterior regions, the singulate gyrus and hippocampus, appear to affect secretion of sexual hormones and sexual behavior. The amygdala and hippocampus are both associated in the production of diffuse emotional states. The neuronal connection of these neurocomplexes with the central gray matter and the brain stem reticulum indicate they can exert regulatory influences on the visceral activities. The role of the adrenals has become somewhat more complex by the differentiation of norepinephrine and epinephrine. Hormonal secretion of these two similar hormones can occur independently with differing physiologic effects. Epinephrine appears to be

concerned primarily with fear and anxiety; whereas, norepinephrine is more related to states characterized by hostility. Function of the corticosteroids in the corrective response to both physical and emotional traumata have been shown by Selye in his discussions of the General Adaptation Syndrome. This complex interacting system of autonomic and endocrine functions may indicate to some degree the difficulty of any but a multiple causation theory of psychophysiological disorder.

The early psychiatric studies in psychophysiological condition were primarily based on analytic theory. Here the early work of Freud postulated the theory that specific psychodynamic configurations caused specific psychiatric illnesses. By extension early workers in the psychophysiological disorder followed this hypothesis of specificity and evolved a hypothesis of psychosomatic specificity. In essence this theory would hold that specific emotions and/or psychodynamics, be they conscious or unconscious, result in some way in specific somatic diseases. Others thought this was not quite true in that there was not symbolic expression of conflict, but that the somatic symptom became a physiologic consequence of specific sequences of unconscious conflict. Other thinkers in the field have believed that psychophysiological responses are primitive regressive phenomena and that the type of symptom is related to the level of regression as described in analytic theory. The question of specificity either dynamic, personality, or emotional, in relation to psychophysiological illness remains a source of much discussion and argument. It would appear to be related to a combination of factors involving not only diffuse emotional responses and/or more specific emotional responses, but the individual's physiologic and anatomic vulnerabilities. Fortunately for the patient, these diverse opinions do not prevent the effective working with him of the physician concerned with treatment of the patient rather than to the disease.

### Psychophysiological Disorders

What, then, are these disorders? They include the psychophysiological skin reactions, psychophysiological musculoskeletal reactions, respiratory reactions, cardiovascular



reactions, gastrointestinal reactions of varying types, genitourinary reactions and endocrine reaction, and nervous system reaction. Diagnostically, there are listed also psychophysiologic hemic and lymphatic reactions, and reactions of organs of special senses, but no well proven cases of either of these are known to exist. In the conditions as listed, the psychologic factors concerned are considered to play an essential role either in primary causation or in the persistence of the disorder.

*Psychophysiologic skin reactions* include those dermatologic lesions considered by dermatologists and psychiatrists to be due to a combination of psychologic and physical causes. More frequently these disorders are called neurodermatitis and exhibit a varying clinical picture. They tend to be characterized by localized or generalized erythema, itching, with variable degrees of weeping of the skin. The factitious dermatitides do not properly belong in this group although in certain instances a neurodermatitis may be secondarily aggravated by factitious excoriations. The exclusion of allergic or local irritant causes is important in the diagnosis of these conditions. It should also be made clear that diagnosis depends, in addition, on finding of positive psychologic factors. Certain forms of pruritus and hyperhidrosis also belong in this group of psychophysiologic reactions. Few would question the fact that emotions tend to express themselves through the skin. All of us have observed, and many of us are sometimes concerned, with susceptibility to blushing. The prickling of the scalp under situations calculated to produce fear is also noted. Psychologically the importance of the skin appears very early in life. In infancy the skin is the first area of contact via petting and stroking which the infant experiences. These psychologic satisfactions remain a factor through adult life more precisely localized in the sexual and sexually stimulating areas. The autonomic nervous supply to the skin is rich and therefore makes easy susceptibility to physiologic disturbance under emotional stress. Theoretical bases for skin reactions vary from suppressed rage reaction where sadistic impulses are apparently turned upon the patient himself and expressed via the integu-

ment, to eruptions which appear to be displacements of erotic impulses unacceptable to the individual. There are occasional eczematous lesions noted in children which appeared to be secondary to deprivation anxiety and/or separation anxiety. These would also seem to be a function of autonomic responses to simultaneous fear and rage at this perceived or actual deprivation.

*Psychophysiologic musculoskeletal reactions* are characterized by muscular tension under transient or acute emotional stress. Probably in these instances prolonged stress is most likely to produce symptoms of this nature. Many of us can note under situations of stress the very common tension headache with involvement of the trapezius musculature. Such secondary muscular tension over prolonged periods may and often does aggravate the symptoms of arthritic conditions and may accentuate the degree of disability both immediate and ultimate. Occasional patients with muscular fasciculations and other muscular movements and torticollis would appear to have similar emotional psychophysiologic relationships. It is considered probable by many psychosomatic theorists that these conditions involve in most instances the repression of rage or hostility normally expressed in these individuals through muscular movement. The sustained inhibition of this responsive movement appears related to the muscular dysfunction.

*Psychophysiologic respiratory reactions* are a varied group including certain disorders where the significance of emotional factors is quite possibly variable and, at times, questionable. Perhaps the earliest occurrence of such disorders is that noted in breath-holding in early childhood. This condition should be distinguished from primary convulsive disorders, and it is usually possible to determine a specific physical or psychologic traumatic event preceding each attack. Where breath-holding is prolonged, differentiation includes the absence of EEG findings and limitation of any convulsive movements to the tonic phase. It should be noted that in these children the incidence of a subsequence diagnosis of epileptic disorders is no higher than in the general childhood population. The attacks usually subside spontaneously between the ages of 4

and 6, although occasional accounts of breath-holding in adults have been reported.

A common problem seen by the general physician is the hyperventilation syndrome. Although this condition is often seen in emergency rooms, rarely does the patient complain primarily of respiratory difficulty. More frequently he is concerned with "blackout," fainting spells and similar dysfunction. At the time of first examination the patient will frequently be in syncope with varying degrees of tetany. Peripheral vasoconstriction often is present with observed or symptomatic complaint of coldness of the extremities. The occasional complaint of chest or abdominal pain appears more related to the increased respiratory effort than to other findings. There is, however, in an occasional case, electrocardiographic evidence including ST-segment lowering and T-wave inversion suggestive of secondary myocardial ischemia. The diagnosis of hyperventilation syndrome is readily confirmed by the rebreathing bag with alleviation of tetany and restored consciousness. These patients are frequently of hysterical character structure and fear or anger most commonly related to sexual threat and/or desire is found on adequate psychologic evaluation. These conflicts may be of acute origin and readily accessible or may be longstanding and quite difficult to elicit. The practical method of initial treatment should include the explanation to the patient of the physiologic bases of his symptoms and the teaching of the practice of rebreathing as necessary for immediate symptomatic relief.

Certain cases of bronchial asthma appear to be associated with psychogenic factors. It should be emphasized that this does not exclude the frequency of primary allergic bronchial asthma in which symptomatology is a function of the allergic environment. Even in these cases, however, susceptibility, as with many illnesses, may be affected by degrees of emotional tension. They cannot properly be considered in my opinion true psychophysiologic disorders, however. In other cases it appears highly probable that the clinical picture of bronchial asthma with severe dyspnea, bronchospasm and varying degrees of changes in the bronchial secretions with characteristic thickening of

these secretions is essentially related to psychologic stresses. The details of the clinical findings are well known to all of you and will not be discussed. The precise psychologic factors concerned with onset and persistence of asthmatic disorders remains unclear. It is thought by many that the asthmatic of psychophysiologic type has a high degree of anxiety associated with fear of maternal disapproval or loss of love and separation from mother or mother figures. This relationship may obtain in association with the wife of an asthmatic or other comparable maternal substitute figure. Various emotional stresses are believed to trigger these conflicts via sexual activity or impulse, competitiveness or rivalry, as well as a situation of threat. The relationships in general appear to be ambivalent, and in numerous instances marked degrees of resentment are evident. Other authors believe that the stresses associated with this disorder are of much more general nature although they probably include varying mixtures of anxiety and resentment.

*Psychologic factors in cardiovascular disorders* have been a subject of much controversy both in general medical and psychiatric circles. That psychologic factors may contribute to cardiovascular dysfunction and at times may be important in the precipitation of these disorders is generally accepted. The emotional responses to cardiovascular disease are understandably significant in view of the threat, both real and assumed, of cardiac illness. In hypertensive cardiovascular disease it appears probable that emotional factors play a significant role in the initiation of illness and that psychologic stresses may be of major importance in the persistence of maintained hypertension. It should be made clear that such factors presuppose individual physiologic susceptibility to hypertensive disease, and that the psychologic factors are primarily involved in the activation of the physiologic mechanisms. The general consensus of opinion is that no specific personality profile, as such, appears to be constant in the hypertensive disorders. It does appear probable that significant difficulty in dealing with aggressive and/or hostile impulses generally concerned with close personal relationships are important. In the progression of symptomatology



it is worthwhile to be aware of a type of "feed-back" cycle which often occurs in these cases. When psychologic symptoms of essentially unrelated nature occur, such as tension headache, the patient may respond to these by an increase in anxiety level, with aggravation of the hypertensive illness on a secondary basis. This may be true, incidentally, in anxiety provoking situations not necessarily related to the presumed specific conflicts. Similar emotional factors appear to be operative in migraine, which is perhaps more commonly found in individuals with more or less compulsive personalities. These persons appear to be highly efficient and very productive. Symptoms appear to be triggered more likely by chronic periods of stress with overcontrol of emotional responses, including both anxiety and anger. The acute onset of headache thus occurs somewhat as though the emotionally charged stream finally reached a level which overran the characterological dam thus activating the headache cycle.

Coronary artery disease has been studied by numerous clinicians with conflicting findings as to the significance of emotional factors. In many of these studies, subsequent work has failed to confirm the initial findings of significant similarities in personality configurations and/or precipitating stress. One of the problems in attempting to accurately assay factors in coronary disease is the probability that some findings are functions of the response to the coronary insult, rather than being primary personality factors. In addition, historical data are likely to be subject to some degree of retrospective distortion in view of the major changes in life pattern necessitated by the acute cardiovascular limitations. Dr. Sidney Cleveland and I have been studying this problem in young adults (under the age of 40), and over the last three years have accumulated a series of 30 myocardial infarctions in young persons. While the data are still in the process of evaluation, our findings including interview data, historical data and multiple psychologic testing do suggest that, in this group at least, these factors are perhaps somewhat more important than is generally believed at this time. There is agreement that psychologic factors are important in response to myo-

cardial infarction and in the subsequent course of the illness. Many of you have seen patients with recently infarcts who are very difficult to control in terms of their physical activity, some of whom will deny, upon initial improvement in symptoms, that any appropriate controls are necessary. It is not surprising that on occasion these people may sustain extension of the infarction and/or stress induced aneurysmal changes. Other patients during the period of convalescence show moderate-to-severe depression which poses major problems for the clinician.

The major *psychophysiologic gastrointestinal reactions* include peptic ulcer, ulcerative colitis and the common gastrointestinal spastic disorders. The syndrome of peptic ulcer is well known to all of you. The frequency with which the symptoms of peptic ulcer may be exacerbated by periods of emotional stress has been repeatedly confirmed. There have been numerous theories attempting to describe consistent personality patterns, consistent stress-conflict, but universally applicable findings do not yet exist. In many instances it is clear that conflictual feelings related to dependency needs play an important role. It should be pointed out that these conflicts may be dealt with by the individual in a variety of ways. This being the case, it should be no surprise that the highly productive, externally self-sufficient individual, as well as the more openly dependent individual may both develop peptic ulcer. In some cases it is reported that varying psychologic stresses producing anxiety related to sexual conflict, aggressive conflicts and dependent conflicts may activate this condition. That vulnerability to a personally specific emotional stress may play an important part in the patient's chances to remain clear of active ulcer is more important than the theoretical stress concerned.

Ulcerative colitis has been shown to be related to emotional conflicts over an extended period of time. In this instance, unfortunately, we share in both the psychologic and physiologic changes the problem of precise delineation. Conflicting attitudes towards one important person in the patient's environment, most commonly the mother or a mother surrogate, are com-

monly present. These attitudes include a markedly ambivalent relationship with strong components of guilt secondary to the mixture of resentment and affection. Not infrequently exacerbations are related to the separation or loss of this important person to the patient. Depressive features are common, and may at times be admitted by the patient. More often, however, these feelings are not discussed and the alert physician must infer from the reported behavior, sleep disturbance, and occasional flare ups of irritability that depressive tendencies are present.

*Psychophysiologic genitourinary reactions* include certain of the menstrual disturbances and disturbances of the sexual function. It is believed by some that occasional urinary symptomatology, including polyuria in some cases, may be psychogenic in origin. This is probably so, but as a rule these cases are more generally secondary to more major psychiatric illness. Disturbances of menstruation, including the commonly occurring dysmenorrhea and some instances of amenorrhea, are generally acknowledged to be associated with emotional changes. Dysmenorrhea appears to occur frequently in women where comfortable identity as a sexually mature woman has been interfered with. Conflicts may involve anxiety related to acceptance of heterosexual desire and/or the ultimate maternal role. Such conflicts may be initiated by difficulties in early relationship to either parent with a history of rejection of the patient's femininity by either. Disturbances of the sexual function include variants of frigidity such as dyspareunia, vaginismus and orgasmic incapacity. It seems significant that increases in incidence of such dysfunction has occurred during a period of marked cultural change. It is not surprising in view of our cultural confusion in this regard, that problems of feminine identity occur frequently. Thus, a conditioned anticipation of pain with associated anxiety, as well as varying degrees of hostility directed either toward male or female figures, often plays a part. The frequency with which the male approaches woman is characterized primarily by lack of awareness of feminine needs and, at times, by ineptitude and is likely to compound both of these areas of conflict.

Sexual dysfunction in men, in contradistinction to feminine dysfunction, is more frequently part of a total pattern of neurotic or characterologic disorder. Purely physical causes for impotence do occur but are extremely rare. The majority of these are secondary to either sexual deviance, (not always clinically evident) or psychoneurotic disorders, primarily anxiety reactions and compulsive disorders. Since these are primarily psychiatric rather than psychophysiologic dysfunctions, I shall not attempt to discuss them as a general group. Occasional instances of transient impotence should be noted, however. Not infrequently under situations of emotional stress, which may be induced by a sexual situation which conflicts with the conscience of the individual concerned, transient impotence may occur. In general this does not significantly alter subsequent function in a nonconflictual situation and may be readily dealt with by clarification of the guilt-inducing aspects of the original occasion. In other instances impotence may occur secondary to fears associated with known cardiovascular or respiratory illness. Unfortunately, these fears are at times compounded by iatrogenic factors. Other instances of male dysfunction are associated with situational stresses including current conflicts with the wife as well as excessive stress involving work or financial responsibilities.

*Psychophysiologic endocrine reactions* have been postulated but remain of questionable significance. It is possible that occasional instances of thyroid activation may occur on a psychogenic basis, but clear evidence in this regard has not yet been found. One additional syndrome of psychophysiologic nervous system reaction is of somewhat dubious nature. The group of disorders referred to here are primarily neurotics who were previously classified as neurasthenic. It is thought that these more properly are primary psychologic conditions with no actual change in physiologic functions. Other authors think that significant neurophysiologic changes occur, but evidence to date has been notably poor. In some instances similar symptoms are part of chronic depressive illness with the known physiologic variance associated with such illness.



### Diagnosis

The diagnostic study of the patient with possible psychophysiologic disease must include a comprehensive *physical and emotional* survey. It should be emphasized that diagnosis in these cases, as in any medical condition, is dependent upon a complete and careful history, thorough physical examination and indicated laboratory studies. Perhaps more important in these cases is a precise determination of the cause for the patient's approach for treatment at the particular time. Careful description of symptoms should be elicited including qualitative types of pain (or other symptoms), intensity, duration, and time pattern. Those factors which may modify the symptom causing it to become more or less severe are always of significance. The appropriateness of the somatic complaint to the organic findings should be carefully assayed. Review of past similar symptoms or other possible psychophysiologic dysfunction should not be overlooked. Essentially, then, the first step in such an evaluation is the careful history and examination needed for optimum care of any physical or emotional illness.

Emotional factors associated with the illness can best be obtained as an integral part of the general medical history. The relationship of onset of pain to present or previously existing emotional stresses and/or conflicts should be explored. In this regard the possibility of occasional paradoxical responses where conscious emotional problems appear to be associated with symptomatic improvement of the physical illness should be noted. Important in such a survey is the meaning of a given experience to the patient himself. Thus, promotion may sometimes be seen by the patient not as a satisfying experience but as a very threatening one. Generally speaking when this is true, careful nonthreatening exploration of these factors will reveal these feelings.

In the psychologic evaluation as described, the ways of handling relationships with other people can often be delineated. Habits of social activity, leadership, shyness, sensitivity, etc., may be of significant importance. The specific relationship to home environment, with spouse and children is likely to be a great importance. The problems in dealing with the family relationship may be

of major significance in the present clinical problem. During discussion of these general relationships, inquiry into sexual adjustment and previous sexual relationships may most easily be explored.

The patient's relation to his parents, brothers and sisters and other relatives should be evaluated. This may give significant information relative both to present symptoms and the patient's current adjustment in his own family and marital situation. Past history of both physical and emotional disorder may be of significance both in terms of patterns of behavior and possible physiologic weaknesses. Not infrequently the patient may respond to fear of illness which he has seen at first hand in some family member.

In our present day situation the great significance of work stress and relationships with superiors, fellow workers and subordinates cannot be overlooked. The type of work should be evaluated, both relative to the patient's job satisfaction and to his appropriateness to the level of work. For example, a Ph.D. working at a clerical or laborer's job may have significant conflicts, either causative of his job choice or secondary to it. Past work experience and his feelings about this experience should be reviewed. In addition, the job ambitions and probability of satisfying these, both as viewed by the patient and as objectively estimated by the physician, should be determined.

### Treatment

Treatment of psychophysiologic conditions is usually accomplished by the general physician and internist who are responsible for his total medical care. It is my own opinion that these patients are much better managed by the sophisticated nonpsychiatrist referral as such. There are certain instances, however, where psychiatric referral is indicated. One of these are instances where significant psychiatric disturbance co-exists with psychophysiologic problems. Management of these cases should be on a joint basis. In addition, where psychophysiologic disorders are nonresponsive to usual treatment methods, consultative referral is often indicated and at times joint management as well.

The psychotherapeutic management of these disorders is dependent primarily on the establishment of a strong, positive relationship with the treating physician. One of the most important factors in establishment of such a relationship is a thorough and sympathetic evaluation of the total problems of the individual as previously described. It is true that care of these patients requires a great deal of the physician's time. Where at all feasible, a minimum of one hour a week, either in single or divided visits, should be allocated. The opportunity for relaxed and leisurely discussion of his problems must be available to him. Sensitivity to areas of a disturbing nature is highly important and care in exploration of these areas should be exercised. In general, it is believed that treatment and discussion centered around areas of current functioning is more likely to be effective in this setting.

A relationship such as the one described offers considerable emotional support to the patient. Additional support is received from the willingness of the physician to listen to these problems and the implicit aims of the therapeutic relationship are of equal value. Direct reassurance may be used but caution should be exercised in this regard. During the therapeutic interchange the patient will be able to express many feelings related to his emotional conflicts and pressures. If a strong supportive relationship is established, feelings of anxiety, resentment, and guilt may be unburdened with significant improvement. As the patient discusses these feelings there is considerable potential for decreasing his sensitivity in these problems. Specific direction involving both the patient's way of living and environmental factors (which may be in the form of suggestion or more direct forms) may be of help. At times such approaches may involve a direct intervention on the part of the physician with pertinent individuals concerned with the production of stresses. These may

include members of the family, employers and other significant persons.

At times, during the exploration of problems in this way, there will be clear instances of failure by the patient to understand the bases on which certain of his difficulties arise. With the focus predominantly in the present, careful and tentative interpretations may be of value. Frequently these interpretations are most helpful when directed toward situations which produce specific exacerbations of the presenting symptoms. Other areas of conflict or anxiety provoking experiences should not be completely ignored, however. A word of caution may be in order. Interpretation of underlying motives and conflicts, particularly where these may involve homosexual impulses not openly acted upon or expressed, or feelings of hostility or anger toward loved ones, such as a mother or wife or husband, should be avoided. Frequently the physician may be of more help in these basic and deep-seated conflicts by suggestions of less emotionally-loaded nature which enable the patient to be under lessened pressure in these areas. This can usually be accomplished without direct discussion of the pertinent problems concerned.

### Summary

We have attempted to discuss certain general principles concerned with the problem of psychophysiological disorders. If the problem of etiology and multiple factors appears complicated and at times confusing to you, we can certainly share this feeling. Description of certain of the more frequently encountered syndromes in a psychological sense has been attempted and may be of help in dealing with some of these difficulties. General principles of diagnosis and management of these conditions are reviewed.

(The author will supply bibliographic references for further reading upon request.)



## CLINICAL NOTES FROM THE TENNESSEE HEART ASSOCIATION

### RHEUMATIC FEVER CONTROL PROGRAM

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Rheumatic fever is a preventable disease. The concept of applying preventive measures to heart disease is relatively new when compared to more established programs of disease prevention. In the case of rheumatic fever, we have the advantage of knowing the predisposing factor which starts the chain of events leading to permanent heart damage, or rheumatic heart disease. This factor is a streptococcal infection, both for initial attacks of rheumatic fever and recurrences of the disease. The proper usage of chemotherapeutic agents to eradicate streptococcal infections makes the prophylaxis of rheumatic fever both feasible and possible.

It has been estimated that in the general population approximately 3% of untreated streptococcal infections are followed by rheumatic fever. Attempts to define the course of rheumatic fever are limited, but figures indicate that within 20 years after the first attack of rheumatic fever approximately 30% of the patients have died. Of these 30% who die, 90% of the deaths are attributable to one of the complications of the disease, i.e., recurrent rheumatic fever, congestive heart failure, subacute and acute bacterial endocarditis.<sup>1</sup>

The child who has had his initial attack of rheumatic fever is much more prone to subsequent attacks of the disease, and the incidence of valvular heart disease increases sharply with each subsequent attack of rheumatic fever. It is apparent, then, that primary prevention of streptococcal infections by prolonged antibiotic prophylaxis will reduce the incidence of recurrences of rheumatic fever and, therefore, of morbidity from rheumatic heart disease. It is believed by the Committee on Prevention of

Rheumatic Fever of the American Heart Association that all patients who have a well-documented history of rheumatic fever, or chorea, or who show definite evidence of rheumatic heart disease, should be given *continuous* prophylaxis indefinitely.<sup>2</sup>

It would appear that there is a real need for a well-organized program aimed at documentation of experiences of physicians with rheumatic fever patients and the prevention of recurrences of this disease.

In 1960, 228 new cases of rheumatic fever were reported in Tennessee. The accuracy of these figures is debatable because in the fiscal year 1959, 882 cases of acute rheumatic fever were reported by 517 of 1,753 general practitioners, pediatricians, and internists who answered a questionnaire circulated by the Heart Disease Control Program of the Tennessee Department of Public Health. Contrast this figure to the total of 123 cases reported for the calendar year 1958 in the Tennessee Morbidity Statistics. Even assuming parameters of overdiagnosis and unreported cases of rheumatic fever, these figures suggest that there is more acute rheumatic fever in Tennessee than has been previously realized.

Because of our incomplete knowledge of the scope of this problem, and due to the need for the provision of low cost chemotherapeutic prophylaxis for needy rheumatic fever patients, the Heart Disease Control Program of the Tennessee Department of Public Health has established a rheumatic fever prevention program in a number of counties in Tennessee.

Operation of the project can be divided into three major aspects:

- (1) The establishment locally of a case register of patients with rheumatic fever and/or rheumatic heart disease.
- (2) The provision of penicillin, both injectable and oral, and sulfonamides to those patients who are determined by their physician as being financially unable to purchase their medication.
- (3) The follow-up of the patients by public health nurses upon the request of the physicians.

Since the program is centered around the physician-patient relationship, the sponsorship and participation of the local medical society becomes mandatory. The patient's

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physician reports the case, requests the prophylactic medication when necessary, and supervises the dispensing of the medication supplied by the State of Tennessee. Approval of the County Board of Health is necessary and the co-operation and participation of the local health department is an integral part of the program in that they provide liaison between the family physician and the State Department of Public Health.

Initially, the Rheumatic Fever Control Program was limited in scope. In 1956 a pilot project was established with case registries located in three counties—Montgomery, Gibson, and Williamson. Since the initial project began in 1956, the Rheumatic Fever Control Program has grown to include 69 of the 95 counties in the State (Fig. 1). Rather than make the program statewide in scope initially, it was thought that the acceptance of the principles of the program must be made by the physicians at a local level. Without their understanding

and sponsorship the program would be essentially ineffective.

Participation of all counties in the Rheumatic Fever Program is of course the ultimate objective. This is not to be achieved, however, without the physicians in the participating counties being fully aware of, and in accord with, the objectives, principles, and modus operandi of the Rheumatic Fever Program. In this latter aspect the Tennessee Department of Public Health is eager to supply the necessary information through the local county or district health departments.

References

1. Bland, Edward F. and Jones, T. D.: Rheumatic Fever and Rheumatic Heart Disease—A Twenty Year Report on 1,000 Patients Followed Since Childhood, *Circulation* 4:836, 1951.

2. American Heart Association: Committee on Prevention of Rheumatic Fever and Bacterial Endocarditis: Prevention of Rheumatic Fever and Bacterial Endocarditis Through Control of Streptococcal Infections, *Circulation* 21:151, 1960.

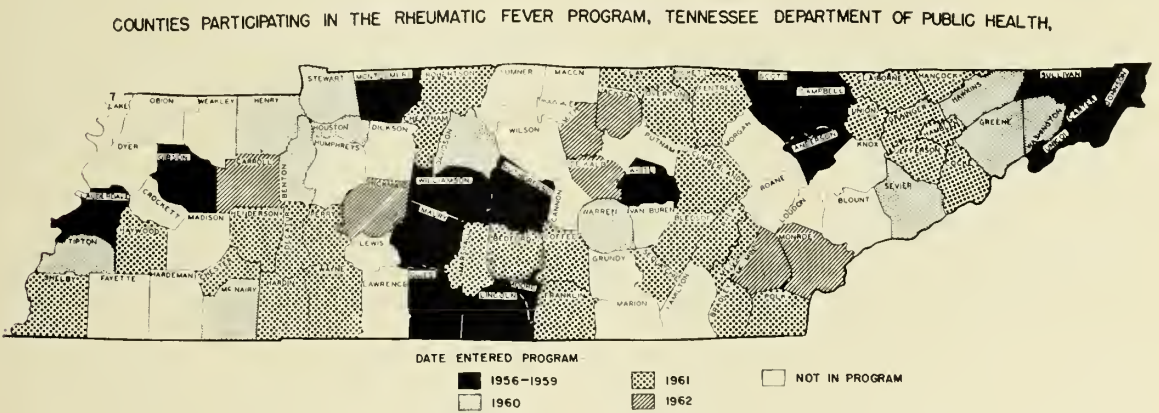


FIG. 1.



## STAFF CONFERENCE

### Gaylor Psychiatric Hospital\* Obsessive-Compulsive Neurosis

DR. G. H. AIVAZIAN: We have for presentation a patient with a severe chronic neurosis. In spite of intensive treatment during the past year her condition has become steadily worse, and has seriously incapacitated her. Various therapeutic modalities have failed, prefrontal lobotomy was recommended by her psychiatrist. The primary problem being that of therapy we would like to have the opinion of the staff in this respect. Dr. Hancock, would you begin with the case summary?

DR. JAMES HANCOCK: The patient is a 51 year old, single, white female school teacher who was admitted to Gaylor Psychiatric Hospital on Feb. 5, 1962. She had multiple, extreme fears such as bits of broken glass being on her person or anywhere, or sprays and disinfectants harming someone if ingested, burning cigarettes starting a fire, and a fear that germs on her person would harm others. She had symptoms of inability to sleep, frequent fits of crying, anxiety, withdrawal to her bed, and little interest in her personal appearance and habits. These symptoms first appeared in a minor form 7 years ago when her mother became bedridden. One year ago this patient became so severely incapacitated that she sought psychiatric help. She received two courses of electroconvulsive therapy with only temporary relief of symptoms. Her psychiatrist recommends prefrontal lobotomy and she desires consultation for this. No psychotic manifestations were present.

In this hospital she remained almost continually in bed, complaining constantly of being in extreme agony. She was apprehensive and cried very readily when she spoke of her discomfort. When speaking about her family and her work she could smile and talk easily. She felt that members of her family were "the finest people in the world" and when questioned about her feelings about caring for her mother she deemed it "an extreme pleasure" and then would burst into tears and talk of her fears. She would frequently ask to have her hands inspected to see if there were broken bits of glass present and would mention that even though she loved Coca Colas, she was unable to drink them for fear of ingesting tiny pieces of glass "broken from the letters on the bottle as the bottle rolled out of the coke machine." She was afraid to eat from her tray be-

cause of fear of broken glass and could not pass around her candy that she had received as a gift, because of fear that there might be glass in the candy which would be eaten by someone. She often stated that she wished that she could offer her candy to all her friends on the ward. She could not describe or explain what she feared might happen but offered explanations which had been told her or demanded to be told what would happen. She was unable to smoke cigarettes for fear that she would not put them out, perhaps leave them half burning and then start a fire. She often reminded other patients to be sure that their cigarettes were put out. When the ward was sprayed with an insecticide, she huddled up in the middle of her bed with a very pained and anxious look on her face, was shaky and cried off and on. She was unable to go to the bathroom without someone attending her for fear that she would not clean the facilities adequately and therefore leave germs for someone else. She feared to comb her hair, afraid that her bobby pins were contaminated. Reassurance could relieve her only momentarily and within a few minutes she would begin relating her fears once again, crying and saying that no one understood her agony. It has been very difficult to get her to talk about subjects other than her fears, and even after talking in great detail about them she felt that she had not covered the subject adequately. She had a strong urge to talk in detail about these and similar ideas which have been pre-occupying her mind constantly.

At age 4½, when her younger brother was born with a congenital heart lesion, the patient was sent by her parents to live with her grandmother and aunt in the same town and remained there for the next 7 years. Even in early childhood she was independent, conscientious, intelligent, and meticulous in her manner. She took great interest in teaching and made many teaching aids. She was often sought out by people for help because of her thorough and conscientious manner in planning and handling matters.

The patient's grandfather and father have been described as rigid, perfectionistic persons. She has three siblings, all of whom have remained unmarried as she has. She, her sister and younger brother have been living together with their mother in the old family home in a small town, except for the few years while the patient attended college and taught school for one year before returning home. The older brother has spent several years in New York City. There is history of emotional disturbance in the younger brother, sister and mother, all reportedly recovered without psychiatric help. The patient suffered a depressive episode at age 24 and made a spontaneous recovery.

Admission physical and neurologic examinations revealed a white middle-aged woman who was apprehensive, easily moved to tears and complaining of extreme agony. Blood and urine examinations were within normal limits. Her EEG. was reported "abnormal as manifested by bi-temporal

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sharp waves or slow spikes. Such abnormality is most commonly seen in the presence of an atrophic lesion."

From the beginning of treatment, the patient has been and continued to be very reluctant to talk about her personal problems. Attempts to uncover emotionally charged material have been met with statements of "I don't remember" or "I'd rather not talk about that." Concurrent with psychotherapy, chemotherapy was initiated with Diazepam, an analogue of chlordiazepoxide. The dose was increased to a maximum of 100 mg. daily, with no benefit. Chlorpromazine (Thorazine) was then begun and slowly increased to a dosage of 800 mg. daily. After 2 weeks the patient was able to be up and about the ward and took interest in her personal appearance. She reported that her fears were still present but that they did not bother her as much as previously. She found it possible to go out of the hospital with her brother for trips to restaurants and for short automobile rides.

Quite suddenly, she withdrew to her bed again with increased intensity of the old fears, compounded by a new undefined fear about failure to file her income tax return for the year.

Interviews with sodium pentothal met the same resistance to talk about her thoughts and feelings about herself and others. She did, however, state that she had often felt that her mother might be better off dead. She related the onset of her symptoms to the time when her mother became bedridden, her first fear being that the mother might ingest bits of broken glass from her glass straws. No show of emotion accompanied these statements.

DR. AIVAZIAN: Dr. May will present a summary of the psychologic tests performed on this patient.

DR. W. THEODORE MAY (Clinical Psychologist): This single 51 year old, white woman was examined by means of the Rorschach technic.

The patient's verbosity and generally indirect negative attitude suggested strong attempts to control the situation. She tended to be tangential and self-limiting in her participation. Inasmuch as the patient gave a comparatively small number of Rorschach responses it is difficult to make a full statement of this individual's personality dynamics. Yet it is clear that aloofness in inter-personal relationships is dominant. Emotional responsiveness is potentially present in immature expressions.

The patient appears to use intellectualizing modes of coping with stresses, which do not presently seem adequate. Denial of feelings is perhaps the more basic attitude. There are some indications of a phobic re-

action, although this is not central. One of her basic conflicts exists in the distorted concept of herself being evolved with longstanding problems of identity, particularly as it concerns her role as a woman.

[At this point the patient is presented and interviewed by the Clinical Director.]

#### Discussion Following Interview

DR. AIVAZIAN: In our discussion we should first concentrate on the differential diagnosis, evaluation of the patient's previous personality and predisposition, the precipitating causes, if any, and dynamic interpretation of her rich symptomatology. Then, in light of her response to treatment so far, we would like to have your opinion regarding further therapy, in particular the indications for prefrontal lobotomy. Dr. Moore, would you discuss the differential diagnosis?

DR. MARION R. MOORE: I am impressed by this woman's obsessive ruminations whereby she appears to be harboring a great deal of hostility to others. However, she can't accept herself as having such unwholesome thoughts or impulses, and she presents a picture of overwhelming anxiety. Accompanying these persistent thoughts were compulsive acts, such as her putting out cigarettes in ash-trays to prevent fires. Diagnostically, she fits in the category of an obsessive-compulsive neurosis. Her fears or phobias seem to be too diffuse to fit a picture of a true phobic reaction. During the interview there was some indication of some memory loss and I wonder whether we are seeing some residuals of electroshock therapy. (ECT.)

DR. AIVAZIAN: We need to clarify the point raised about a possible memory deficit. Dr. Hancock, would you comment on whether there is any memory deficit, and if so whether the deficit can be related to ECT?

DR. HANCOCK: The patient's memory deficit is primarily in the range of the last seven years or so. Some items she can't remember exactly, such as when she got sick, and she can't relate them to her mother's illness. She is much more "forgetful" of the events of the past six to eight months following ECT.

DR. AIVAZIAN: Is there anything selective about her memory deficit?



DR. HANCOCK: To me it is selective in that she can't remember certain incidents, such as what happened when her mother got sick, how she reacted to it, and similar topics.

DR. AIVAZIAN: Post-electroshock confusion and memory deficit are not selective, are consistent, and gradually improve. The memory gaps she presents are manifestations of suppression and repression rather than being organically induced by ECT.

DR. CHARLES P. DEMINICO: I should like to start off by discussing the patient's previous personality which perhaps might give us ideas as to what we face here today. She presents a typical background, both in her early and more mature years, of a compulsive personality. She was excessively meticulous, overly conscientious in her work, and very attentive to fine details. This personality pattern appears to have been decompensated more recently, probably by current stresses, resulting in the immobilized woman presented today. Now we have a variety of symptoms which could confuse us in terms of differential diagnosis and regarding her reason for being in the hospital. When a compulsive personality breaks down under various stresses, the resulting neurosis might be one of several distinct clinical syndromes. The most common of these reactions is obsessive-compulsive neurosis, followed in frequency by involutional depression, anxiety reactions, and other conditions. The picture which ensues depends upon stresses and predisposing personality factors. The most prominent manifestations presented in this case today seem to fit best an obsessive-compulsive reaction.

DR. KENNETH CARPENTER: We are faced with the presenting symptoms of fear of glass, bug sprays, cigarette burns or fires which might harm others, along with the idea that she may contaminate others. These fears involve other people and indicate the presence of a great deal of hostility for others. The hostility being severely curbed, repressed by mechanisms which have been giving rise not only to obsessive ideation but also to depressive features. Having had the opportunity to see this patient on the ward I think there is not much doubt that these are not true phobias that she has. This is not fear of glass but fear

of all the consequences and ideas that other people may be harmed. It is not a fear of cigarettes, she smokes, but a concern about what will happen if a cigarette is left burning. I don't think that she has improved.

DR. AIVAZIAN: I would like to pursue further the differences between obsessive-compulsive neuroses and phobic reactions. The essential, distinguishing feature of the obsessive-compulsive symptom lies in its appearance as a thought content, with consistent presence of an idea, feeling or impulse to perform an act. The fears are associated with bizarre imaginary dangers. In obsessions, anxiety is dependent on ideas rather than to being provoked by exposure to objects or situations as in the case of phobias. Also, the obsessive unlike the phobic patient does not utilize avoidance mechanisms.

This patient consistently used the words "dread" and "phobia," but explained these as preoccupations with ideas. Moreover she is afraid that something will happen to others rather than to herself. These are indirect expressions of her hidden wishes and hostility, through projection. She is, as if saying, I wish these awful things would happen to people. It is however, quite clear that the primary target for her hostility has been her mother.

DR. DEMINICO: We have to take into account a clinical observation which has been made repeatedly. That is, in any neurotic condition we may have mixed symptomatology. Obsessive-compulsive individuals are known to have obsessions and/or compulsions and together with these may have anxiety, depression and fears. On the other hand the important thing for us in terms of a diagnostic delineation is to determine which feature is the most important part of the picture. We should first remember that here is an intelligent and well educated woman. Secondly, as was pointed out previously this woman has consistently manifested several characteristics in her personality:—meticulousness, conscientious in her work, concern about details. She has been doing things, as it appears, out of a sense of duty rather than from a feeling of affection for the person or the persons involved, yet she has continued to function effectively until recently. Therefore, we

have here a compulsive personality with two known psychoneurotic breakdowns: first, six years ago from which she recovered or at least improved sufficiently to return to her usual occupation, and the second time about a year ago. Dr. Hancock, in your opinion what were the precipitating causes of the first episode and the current episode?

DR. HANCOCK: In my opinion it was the sickness of the mother leading to complete necessity for the family to care for her. She was bedridden, the children had to care for her both financially and by getting a nurse, and taking care of her when the nurse was not there. The patient herself at first helped equally with the others but soon it has been told by her and by her sister that she was no longer able to keep up the care of her mother and care fell more and more on her sisters.

DR. LORENZO REODRIGUEZ: The family background of this patient is extremely unstable, including a very compulsive father and grandfather, a nervous breakdown on the part of the mother, and other evidence of emotional instability regarding her brothers and sisters, who have never married. The patient's personality has been dominated by her super-ego and she has been self-effacing and has found some relief of her anxiety in the past through hard work as shown by her classroom performance and teaching. Her present illness is characterized by fears which she has utilized to substitute for unacceptable impulses, part of which quite obviously is hostility. She has been repressing this hostility and substituting it with the fears that other people might get harmed in unusual ways. Since her hard work in the past was based on neurotic needs I would feel that this has never been completely satisfactory and has resulted in giving this patient a feeling of having been exploited rather than having had fulfillment in her past history. Her symptoms serve several purposes:—to keep under control unacceptable impulses; rendering herself helpless and thereby refusing in a nice acceptable manner to be exploited any longer; she also may continue to maintain the self-image of a hard working, effective woman that she has been in the past.

DR. AIVAZIAN: Let us hear some ideas

regarding further treatment and prognosis.

DR. MOORE: It has been pretty clearly shown that all the treatments to date have failed to relieve this woman. She has run the gamut of ECT, twice, various chemotherapeutic agents, and psychotherapy which could not reach her. Since severe obsessive-compulsive neurosis is one of the indications for prefrontal lobotomy, I feel that the operation is indicated in this case.

DR. DEMINICO: Now we are interested in the final result,—that is, what are we going to do for this patient? The prognosis is poor in terms of a full working adjustment but again we have to qualify this from the standpoint that when we talk about prognosis what are we looking for? For example, as a school teacher her prognosis is definitely poor. On the other hand in terms of her adjusting at home with the help of her family, we would have to modify our viewpoints regarding prognosis. This leads us to the subject of why she was referred for a lobotomy. In making any such recommendation I would have to qualify this with the remark that it depends upon what we are looking for as an end result:—do we want a school teacher, a housekeeper, or somebody who is socially adaptable from the standpoint of nursing care required, or perhaps might we do this to ease her suffering if this is unbearable? Note that the patient is presently on chlorpromazine, so is this another avenue open for us to explore? How well are we doing with chlorpromazine and is it so much less drastic treatment than lobotomy that perhaps we should consider a continuation of this before attempting a relatively drastic and irreversible surgical procedure?

DR. CARPENTER: Chlorpromazine has not been particularly effective. Certainly she is not crying but she is not functioning any better either today than she was the day she came in. She is spending more time in bed now and all the time in the room. It seems to me that this is an obsessive-compulsive person in whom treatment thus far has not been helpful from the standpoint of making her comfortable with herself. So I think we'll have to consider prefrontal lobotomy now that she has had a pretty thorough trial of ECT, and drugs.



DR. DAVID S. PANKRATZ: She is rapidly tending to become an invalid like her mother and whether this is hostility toward her mother or not I'm not sure. But I think she has definitely improved as far as some of her symptoms are concerned. She could possibly be handled at home with chlorpromazine for awhile. The only drawback is, besides being tranquilized she is also immobilized with the use of higher dosage of the drug which has been needed recently, so that now she appears withdrawn. Therefore perhaps chlorpromazine is not the final answer.

DR. AIVAZIAN: In summary then, we have a patient with a well defined previous compulsive personality, who has maintained a workable adjustment until a year ago. Whereas she made a satisfactory recovery from a similar condition six years ago, the course of the present illness has been steadily towards the worse. The major precipitating causes have been involuntal age and the demands of her mother's illness, which seem to have activated unconscious hostile feelings. Her previous defenses have not only been ineffective to cope with the new situation, but have been disorganized. Consequently she seems to have mobilized new defenses in order to repress these threatening hostile feelings. The side effects of her new attempts appear as her presenting symptoms. Preoccupation with ideas is the core of her symptomatology; its severity and consistent presence would war-

rant the diagnosis of obsessive-compulsive neurosis.

In regard to treatment, due consideration was given to the severity and duration of the illness, the therapeutic modalities tried so far and their results. Unfortunately results with ECT., chemotherapy, and psychotherapy, tried singly and/or in combination, as well as the benefit of separation from her immediate stresses have been unsatisfactory. Therefore, continuation of the same methods would not be promising.

Serious and cautious consideration was also given to prefrontal lobotomy, which, however, is a fairly widely accepted method in the treatment of obsessive-compulsive neurosis. Some prefer to resort to lobotomy only after other methods of treatment fail. Others prefer an early decision, particularly in severe cases with intense anxiety and depression. This patient on the one hand has had the benefit of time and treatment and on the other presents not only symptoms which are considered favorable indications for lobotomy but also does not manifest compulsions and rituals, which are known to respond unfavorably to lobotomy. The success of prefrontal lobotomy to a great extent depends upon post operative re-educative therapy.

Should the patient or the family postpone or reject lobotomy, we have to combine chemotherapy and supportive psychotherapy.

## CLINICOPATHOLOGIC CONFERENCE

### Baptist Memorial Hospital\*

#### Malignant Pericardial Tumor with Pulmonary Embolization

This 47 year old white man entered the outpatient clinic in Feb., 1961, with the complaints of progressive shortness of breath, orthopnea, edema of the lower extremities and a cough productive of whitish sputum. The patient had been in good health until the Fall of 1960, when he developed swelling of the right leg accompanied by two episodes of pneumonia with pleurisy.

Physical examination at this time was said to be negative. However, a chest x-ray revealed gross cardiac enlargement with the heart having a globular configuration suggesting a pericardial effusion. The right costophrenic sinus was obliterated by a homogenous density having the appearance of a pleural effusion. In the right lower lung field were patchy areas of diffuse infiltration, and in the left lung field, extending from the superior margin of the left cardiac shadow peripherally, there was a linear homogenous density having appearance of atelectasis. The mediastinum was in the midline and both hilar shadows were accentuated. Therapy consisted of digitalization and oral diuretics, and on this treatment the patient received temporary symptomatic improvement.

On March 6, 1961, the patient was hospitalized as the result of progressive dyspnea on exertion, chest pain, and orthopnea of 2 days' duration.

A review of systems at this time revealed a diagnosis of "stomach ulcer" several years previously, and the patient admitted to heavy drinking and smoking. The family history was noncontributory.

On examination B.P. was 120/70, R. were 28, P. was 110 and regular, and T. 98.6°. The patient appeared undernourished and in acute distress. Moist rales were present in both lung fields, and there was moderate wheezing. No pleural friction rub was present. There was a sinus tachycardia with a gallop rhythm. The heart tones were distant and no murmurs were heard. The abdomen was flat and no abnormal abdominal masses were palpable. There was no abdominal nor costovertebral tenderness. Four-plus pitting edema was present in the right leg to above the knee, and there was a palpable thrombosed vein in the right leg. The left leg was slightly edematous and there was swelling in the right elbow and forearm, and the right brachial vein and surrounding soft tissue was warm, tender, and firm. Neurologic examination was negative.

Laboratory findings: Hct. was 31%, Hgb. 9.6

Gm., WBC. count 15,600 with a differential of 72% neutrophilic segs, 2% bands, 2% eos., 17% lymphs., 7% monos. The RBC. morphology revealed slight anisocytosis and hypochromia and an occasional diffusely basophilic red cell. Platelets were normal. Urinalysis: Urine was yellow and clear, pH alkaline, sp. gr. 1.019, albumin, sugar and acetone were negative; microscopic—rare WBC. and rare RBC. with few epithelial cells and no casts. Uric acid was 4.9 mg.%. Prothrombin time on Mar. 8—control 13½ sec., patient 1 minute 35½ sec. Repeat prothrombin time 8 hours later, control 13 sec., patient 20½ sec. Lee-White clotting time on Mar. 6 was 12 min. and on Mar. 8, 11½ min. Plasma urea nitrogen 30 mg.%. Electrolyte study on Mar. 8: sodium 128, potassium 4.5, chlorides 88, and CO<sub>2</sub> combining power 28 mEq/L. Repeat blood count on Mar. 8: Hct. 35.5%, Hgb. 11.3 Gm., WBC. count 28,300 with 89% neutrophilic segs. 3% eos., 3% lymphs., 5% monos., normal RBC. morphology, platelets normal.

X-ray of the chest on March 6, revealed some clearing of the pleural effusion seen in right costophrenic sinus. The heart was enlarged and its configuration suggested a pericardial effusion. The size had not increased from previous examination on Feb. 20, 1961. Repeat chest x-ray 2 days after admission revealed diffuse homogenous density in the lower two-thirds of the right hemithorax with a hazy density over the upper third of the right hemithorax through which aerated lung could be seen. The cardiac border reached the left lateral costal wall. The clinical interpretation was massive pleural effusion on the right with underlying pulmonary edema and possible pericardial effusion. An EKG. on Mar. 6, revealed inverted T waves in leads II, III, and AVF with a sinus tachycardia. A repeat EKG. 2 days later revealed depressed and sagging ST segments in leads II, V5 and AVF, and low amplitude T waves in leads I, II, V4 and 5.

Course. The patient was treated with a low salt diet, mercurial diuretics, aminophyllin, oxygen and meperidine. He had severe dyspnea and orthopnea, and a chronic cough which on the 2nd hospital day became productive of fresh blood. Early in the morning of the 3rd hospital day the patient developed severe chest pain accompanied by marked shortness of breath and a pleural friction rub developed over the right lung. The hemoptysis increased, and his respirations became quite labored. He developed percussion tenderness over the right lower chest, and the friction rub over the right lower chest became less intense. The patient's respiratory distress became quite severe, and he expired on the 3rd hospital day.

DR. OTIS WARR: We are very happy that we have Dr. Robert Norman, a recent addition to our staff on Internal Medicine, who will be the discussant. Dr. Norman.

DR. ROBERT NORMAN: We are given

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a history of a 47 year old white man who was apparently in good health except for his admitted habits of smoking and drinking heavily, and presence of "stomach ulcer" several years before, who developed an illness some four to six months before he came into the hospital and expired.

At the onset of his illness, he developed symptoms that direct our attention toward the cardiovascular and pulmonary systems. Its course was progressive and relentless and terminated with what seemed to be pulmonary emboli. The onset of his illness began with recurrent swelling in his right leg which apparently remained chronically swollen during this entire period of time. In view of the thrombosed veins noted on admission in the leg, we are fairly certain that he had developed a thrombophlebitis in the lower extremities. After his admission to the hospital he was found to have the classical signs of an acute thrombophlebitis involving his right brachial vein. Thrombophlebitis of the veins commonly occurs after injections are given in the veins of the arm, especially with drugs like aminophyllin, which might have been given to this patient prior to his admission. In the absence of any history of a recent injection, it seems that this thrombophlebitis in the right arm developed spontaneously. Such an occurrence in a nonpregnant adult in good health, points toward the presence of polycythemia or possibly an occult neoplasm. This man was certainly not polycythemic; in fact he was mildly anemic, and so we are left with the suspicion that he might have had a hidden neoplasm somewhere, and at this point the plot begins to thicken considerably. When thrombophlebitis does develop in association with neoplasm, the tumor may arise in the pancreas, lung, ovary, colon, stomach, gallbladder, or uterus, and it has been reported in association with malignancy of other viscera. There are several instances of cessation of recurrent thrombophlebitis following excision of the primary neoplasm. Specifically, I know of reports concerning disappearance of thrombophlebitis after removal of bronchogenic and ovarian carcinomas. It is evident that phlebitis of this type is associated generally with viscera that have glandular structures. In a recent review in

*Cancer*, (Vol. 14) Laffler and Hinerman reviewed 106 cases of pancreatic cancer and found 24% of these to have multiple thrombi. The presence of heart failure seems to be indicated in this man by his dyspnea, which was present with exertion and also at rest. This can certainly be produced by pulmonary disease as well as cardiac disease. Some edema of his left leg was present. He was described as being orthopneic, having tachycardia, a gallop rhythm and basilar rales in his lungs. There is no history of hypertension, syphilis, rheumatic fever, cardiac murmurs, angina or myocardial infarction to suggest an etiology for underlying heart disease. We would expect a man of 47, who is a resident of the United States, to show some coronary atherosclerosis. It is not unusual to find left-sided heart failure precipitated by pulmonary emboli associated with right-sided heart failure. I believe this may be what happened in this man, even though the cardiac configuration on x-ray was suspicious enough to cause the radiologist to repeatedly suggest fluoroscopy to rule out pericardial disease. May we see the films, please, Dr. Booth.

DR. JAMES L. BOOTH: This is the first film that was taken when he came in as an outpatient, and we see a water bottle-shaped heart. By saying "water bottle" we suspect pericardial effusion; we cannot prove it until we do a fluoroscopy, and then sometimes we have trouble. But if we see a "silent" heart, we can be pretty sure it is pericardial effusion. Note the fluid at his right base. There is also a patchy infiltration here and there. On this side is a straight line, which was described as extending out from the left cardiac border toward the costal margin, representing some infiltration in the left lung. In the next film, by portable machine, made on Mar. 6, we see enough to suggest the medication he had been getting had cleared up the fluid at the right base. Again we see the water bottle-shaped heart and some rather prominent hilar shadows which would suggest congestive failure. We do not see this left lung field well enough to really evaluate it, but it does appear that some infiltration is still present. This last film was taken two days later. This again shows the

very large heart, and we are now beginning to see more congestion or infiltration around both hilar areas. The film is not of sufficient penetration to get through these lung fields, and one does get the suspicion that there is a homogenous density with the concavity directed inferiorly that would suggest a fair-sized pleural effusion on the right. On the left we see a clear costophrenic angle, indicating no fluid, but again a density adjacent to the heart. Allowing for the 30% magnification produced by the bedside technic, it would appear that there had been a little increase in size. So we have what appears to be a water bottle-shaped heart; whether it is an effusion or just a big dilated heart cannot be determined with certainty. It would have been nice to have had a fluoroscopic examination to see if it was a quiet heart, and as I have seen on occasion in massive pericardial effusion, a heart that does not pulsate at all,—then one can make a definite diagnosis. Tilting the patient from the upright to prone position and then seeing an increase in the width of the mediastinum is also of value.

DR. NORMAN: Dr. Booth, did you see anything in these films to make you suspect he might have a hidden tumor in the lung?

DR. BOOTH: No, I did not.

DR. NORMAN: There was no fever mentioned in this man's history. If this were a pericardial effusion as a result of tuberculosis or some other infectious process, I would certainly have expected the fever to have been mentioned. The same holds true for disseminated lupus erythematosus in which pericardial effusion is said to occur in approximately 50% of cases at sometime during the course of the illness. There certainly is nothing specific about the marked white count elevation that he had. One point that I might mention about his white count is that he had a very pronounced lymphopenia. I think this was an absolute lymphopenia and this occurs sometimes in lymphoma, and it may be a tip off to the presence of lymphoma. It also occurs in situations where the adrenals are putting out a tremendous amount of corticosteroid hormones and this may have been an explanation for it. I am not going to be able

to explain all of the things that are mentioned as being abnormal in the protocol, because there are so many of them.

There are some other features that I would like to mention that are somewhat against the pericardial effusion. One of these is the absence of any mention of paradoxical pulse. Another is the presence of a good pulse pressure, and the absence of marked venous and hepatic distention. Of course, it is possible to develop very marked pericardial effusion slowly over a long period of time, with enough time for the pericardium to stretch without getting any signs of tamponade. The most nearly perfect means of ruling out a pericardial effusion is pericardiocentesis, and I would not rule this out since a tap was not done. I assume that a tap was not done, either because it was suspected this was not an effusion or because of the marked prolongation of the prothrombin time that was mentioned in the protocol. One other means of finding out if an effusion is present without danger of causing bleeding into the pericardium, from the needle plus hypoprothrombinemia, would be to do an angiocardigram and demonstrate effusion by this method. He had a mild anemia which seems of an iron deficiency type. The most likely cause for this in a man with a history of ulcer would certainly be blood loss from the gastrointestinal tract. There is no mention that a guaiac test was done on his stools. It probably would not have been very helpful to do this, however, because he was apparently coughing up and swallowing blood. His EKG. is compatible with cor pulmonale, I believe. On reviewing his EKG. which was made available to me, I thought probably that the man had a large Q wave in lead III and smaller Q waves in II and AVF and inversion of T waves in the posterior leads. This is certainly not diagnostic of cor pulmonale, merely compatible.

The hospital course was only of two days' duration and this seems to have been marked by signs and symptoms of pulmonary infarction with recurrent pleurisy, dyspnea, cough, and hemoptysis. The changes that we see in his films in the pleural effusion, in the absence of a thoracentesis, make one suspect that these were not due to neoplasm and did represent im-



provement in congestive heart failure or regression of pulmonary infarction. One point which could be important that is mentioned in the protocol is the tenderness which was described over the right lower chest preterminally and the friction rub that is described. If I read the protocol right, a friction rub was heard over the right lower chest. This may not have been a pulmonary friction rub. It is possible this friction rub was arising from the liver. It certainly may be heard rising from the liver in this area and the tenderness that was present would make me suspicious that it did arise here. The presence of a hepatic friction rub is almost pathognomonic of metastatic neoplasm of the liver. This has been pointed out recently by Klatskin in an article reviewing a number of cases of hepatic friction rub. In summary, I believe that this man probably did have an occult visceral neoplasm somewhere. If I had to stick my neck out, I would choose the lung as the most likely site. It would be easy to hide a bronchogenic carcinoma behind this large heart or within these lung infiltrates. Also, I believe he had multiple thrombophlebitis associated with carcinoma and that he had multiple pulmonary emboli as a result of the thrombophlebitis in the leg veins. My second choice if I had one as to site of his neoplasm would be the stomach because we have a history of "stomach ulcer." He had a mild anemia and this certainly suggests that something was going on in the gastrointestinal tract.

DR. WARR: Dr. Norman, that was a very excellent discussion. I would like to answer a few questions. The progress notes show there were two friction rubs, one in the left upper chest and one in the right lower chest. Temperature was 103 during the first few days and 101 on the day he died. The internist is not here, I believe.

DR. ARTHUR BELLITT: I was on the service at that time but saw the patient only once during his two hospital days, and he was obviously moribund with a neoplasm.

DR. ROBERT McBURNEY: Was this man on anticoagulants? We are not told so in the protocol. Why was his prothrombin time abnormal?

DR. OTIS WARR: Yes, he was on Pan-

heparin. They might have collected the prothrombin time right after they injected the heparin. That can be the explanation. Dr. Reynolds wants to know if we think the EKG. would support the diagnosis of cor pulmonale.

DR. NORMAN: I feel it would support the diagnosis but is not diagnostic, merely consistent with it.

DR. LEO WRIGHT: I would like to point out that multiple thrombi are not at all uncommon in heart failure, especially terminally, and this might explain the thromboses and infarctions rather than neoplasm.

DR. OTIS WARR: Dr. Wright would like to suggest that this may be explained entirely on the basis of congestive heart failure.

DR. WRIGHT: I am not making that diagnosis but suggesting the possibility and would like to say this patient probably has a huge heart and probable pericardial effusion.

DR. WARR: Dr. Norman, do you believe that he had a pericardial effusion?

DR. NORMAN: I suspected it strongly but had nothing to rule it in or out in the protocol.

DR. WARR: You cannot include it or exclude it then.

DR. T. F. MOGAN: Dr. Norman, we have a history of heavy alcohol intake. Do you think alcoholic myocarditis can cause such a picture?

DR. NORMAN: Although many British authors have written at length about alcohol cardiomyopathy, I know of no specific means of making the diagnosis and have never seen a case that I recognized as such.

DR. WARR: Dr. Strickland, would you give us the autopsy findings in this case?

DR. CHARLES E. STRICKLAND: The principal areas of involvement in this case were the heart and adjacent structures, lungs and veins of the extremities. The patient had a large mass occupying a major portion of the left anterior hemithorax. This mass completely encased the heart and extended into the mediastinum where it surrounded the anterior mediastinal vessels and extended laterally to involve a small portion of adjacent lung parenchyma. The mass was gray-white and had a firm, rubbery consistency with only a few areas of

hemorrhage and necrosis. The tumor had infiltrated a major portion of the pericardium producing a thick rigid fibrous capsule, which in its thinnest areas measured over 1 cm. in thickness. The inner surface of this tumor was irregular and covered by a reddish-brown fibrinous exudate. The epicardial surface of the heart was also diffusely infiltrated by the tumor, which in areas extended deep into the myocardium. This tumor had produced a thick, rigid outer shell over the heart, and between the two tumor surfaces there were 375 cc. of fresh blood under considerable tension. Microscopic sections of the tumor revealed a neoplasm with a pleomorphic growth pattern of solid sheets and cords and abortive glandular structures. (Fig. 1.) The cells

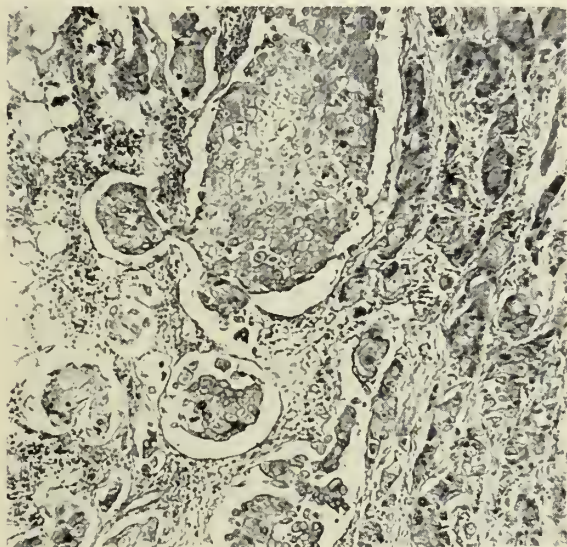


FIG. 1. Malignant mesothelioma involving epicardium with extension into subepicardial fat.

comprising the tumor were large and pleomorphic and many of them had a clear faintly granular cytoplasm. Special stains revealed periodic acid Schiff positive and mucicarminophilic material in the cytoplasm of some of the cells and in a few areas in the intervening stroma. No definitive histologic pattern or organoid structure was apparent in any of the sections of the

tumor and the only tumor present outside the thorax was a single small metastatic nodule in the left adrenal medulla. No site of primary tumor could be found in the lung or mediastinum, and because of the extensive involvement of the epicardium and pericardium and immediately adjacent structures, it is felt that this tumor most likely is of mesothelial origin representing a primary malignant mesothelioma of the pericardium. The extensive local growth of the tumor and the special stains together with the pseudoglandular pattern of this tumor support this concept.<sup>1,2</sup>

The patient had extensive areas of thrombophlebitis involving superficial veins of the right leg, and to a lesser extent, the left leg and the right brachial vein. These areas of thrombosis were the site of origin of multiple emboli as there was extensive pulmonary embolization involving primarily the medium-sized pulmonary arteries. The emboli had probably been shed intermittently as some of the areas of infarction were old and fibrotic while others were recent and hemorrhagic. Some of the pulmonary emboli were firmly organized while others were loosely adherent to the endothelium of the pulmonary arteries and still others were free in the lumen of the pulmonary arterial branches.

*Anatomic diagnosis:* Malignant undifferentiated tumor probably malignant mesothelioma involving epicardium, pericardium, mediastinum, and lung with recent hemopericardium and solitary metastasis to adrenal medulla; thrombophlebitis, multiple of veins of extremities with extensive pulmonary embolization and multiple areas of pulmonary infarction.

#### References

1. Alvavo, B. C., Aquirre, A., and Perez-Tamayo, R.: Malignant Peritoneal Mesothelioma, *Am. J. Clin. Path.* 36:417, 1961.
2. Winslow, D. J., and Taylor, H. B.: Malignant Peritoneal Mesotheliomas, *A Clinico-Pathological Analysis of 12 Fatal Cases*, *Cancer* 13:127, 1960.



## President's Page



WILLIAM J. SHERIDAN,  
M.D.

Currently debated issues involving proposed additions to the Social Security System in contrast with the previously enacted legislation to care for our aged citizens by a grant-in-aid mechanism administered by the states, brings into sharp focus the role of the physician in the political scene. Time was when we were admonished that above all else to be avoided was the physician engaging in controversial endeavors such as politics. But times have undergone decided change. We must now realize that our first duties are as citizens, and if we are to preserve a way of life which we consider best, we must no longer hold ourselves aloof but must keep informed and keep abreast of current political issues. After carefully weighing and assessing the involved proposals it is incumbent upon us to vigorously pursue that course which we consider to be in the best interest of the public and medicine. One of our well-known Senators in an address to a medical audience made the statement that, "You may keep out of politics if you so desire, but you cannot keep politics out of your business."

It is not the purpose of this Association to direct you in your political thought, however it does have the obligated duty to make available to its members current information indicating any varying and changing trends which concern the health of the Public. Some proposed measures may appear to be advantageous and others detrimental to good medical practice. We must diligently strive to elevate, not to lower, the present level of over-all health care; vigorously oppose any system which we believe would effect its deterioration to any degree.

After careful deliberation and with seasoned and well grounded decision it is your duty as a citizen to assert yourself in the only effective manner—vote for that candidate who best represents those issues which you consider will elevate the standards of Medicine and the health care of the Public.—But *vote!*

*William J. Sheridan, M.D.*

President

# THE JOURNAL

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July, 1962

## EDITORIAL

### ANTICOAGULANT THERAPY

Anticoagulant therapy in the management of patients with thrombo-embolic disease is used extensively. In the 1930's, Link and his associates made their brilliant observation on the hemorrhagic disease of cattle caused by spoiled sweet-clover and later identified the hemorrhage-inducing agent as coumarin. In 1940, they first synthesized bishydroxycoumarin and about this time Quick and his associates developed the prothrombin time test which determines the clotting time of recalcified plasma after the addition of tissue thromboplastin.

These two discoveries had far-reaching effects and were, in the light of today's knowledge of blood coagulation, a major breakthrough.<sup>1</sup> It was correctly assumed that such coumarin drugs in controlled doses, below those producing hemorrhage, would be useful in the treatment and prophylaxis of thrombo-embolic disorders.

Since that time various studies suggest that the Quick method is still the best procedure for measuring prothrombin time as it is simple, inexpensive and as satisfactory for clinical use as more complex procedures.<sup>2</sup> The optimal dose of anticoagulant is that which affords maximum protection against thrombo-embolism with a minimum hazard from induced bleeding. Wright and his associates<sup>3</sup> showed that anticoagulant therapy maintained at two to two and a half times the control prothrombin time gave good therapeutic results with minimal complications. Peyman<sup>4</sup> showed that there was a significantly higher incidence of thrombosis when the prothrombin time was two times or less the control time, and a higher incidence of bleeding when the prothrombin time was three times or more the control. It therefore seems reasonable to strive for a prothrombin time at least twice the normal control. With the advent of long term anticoagulant therapy the possibility of hemorrhage increases. The reported incidence of bleeding as a complication of such therapy in experienced hands varies from 10% in hospital patients to 40% in ambulatory patients on long term therapy.<sup>5</sup> Much of this bleeding is clinically insignificant and the incidence of serious hemorrhage varies from 2 to 10 per cent. Considering the seriousness of the underlying disease, such a risk certainly is acceptable. Although serious bleeding may occur with a prothrombin time in the therapeutic range, nevertheless the hazards of such treatment are most frequent in those not following accepted anticoagulant procedures. Certain safeguards should be employed to minimize the risk of induced bleeding.

First, the patient should be selected for his ability to follow a regimen, to understand the importance of regular determinations of prothrombin time, to be available for regular examination and to notify his physician of any unusual bleeding. In other words, he must understand thoroughly the dangers inherent in such therapy and be mentally, emotionally and physically able to carry out the proposed program.

Second, the physician must not consider for anticoagulant therapy those patients with complicating disease that would increase the risk of hemorrhage, such as blood



dyscrasias, hepatic dysfunction, renal insufficiency and ulcerative disease of the gastrointestinal tract.

Third, such patients should not be taking drugs which increase the risk of bleeding from anticoagulant therapy. ACTH and adrenal corticoids increase the danger from anticoagulants in the human and in the experimental animal. Salicylates not only depress the prothrombin time but also increase the tendency to bleeding from gastric irritation and, therefore, should be avoided during such treatment. Similarly, certain drugs which may be ulcerogenic, such as cincophen, phenylbutazone and reserpine should not be used in conjunction with anticoagulants. Finally, certain antibiotics may, by interfering with the bacterial biosynthesis of vitamin-K in the intestine, alter the prothrombin time.

Fourth, the physician should understand the importance of accurate laboratory results and the limitations of such tests. At a recent meeting of the American College of Physicians, Seide showed that thirteen reputable laboratories cooperating in a study of the Quick prothrombin test gave results which were divergent from laboratory to laboratory and also within the same laboratory. Caution must be exercised in interpreting all laboratory data, and changes to larger doses of anticoagulants based on a single high value which is not checked is often responsible for bleeding.

The most common hemorrhagic manifestation is probably hematuria, with ecchymosis, epitaxis, bleeding gums, hemoptysis, and hematomas accounting for most of the other non-fatal bleeding. Fatalities result most frequently from either brain hemorrhage or bleeding from the gastrointestinal tract.

A very important additional problem is the risk of interrupting anticoagulant therapy because of hemorrhage. Anticoagulants may be interrupted for surgical procedures for short periods with a minimal risk. When interruption of therapy is the result of bleeding, 33% of the patients die from myocardial infarction, cerebral thrombosis or suddenly without known cause and within a short time. Sise and his associates postulated that the hypercoagulability resulting from transfusions or from the bleeding it-

self, overshoot from the administered vitamin-K<sub>1</sub>, or that stasis from the bed rest imposed on the patient may be responsible.

The risk of anticoagulant therapy cannot be eliminated entirely since bleeding is simply an extension of the therapeutic effect. It can be minimized by rigid adherence to sound principles of anticoagulant therapy which includes careful selection of patients, informed and adequate supervision by a physician and reliable laboratory control. A close doctor-patient relationship is essential for the adequate care of patients taking anticoagulant therapy.

A. B. S.

#### References

1. Miale, J. B.: Laboratory Control of Anticoagulant Therapy, *J.A.M.A.* 180:736, 1962.
2. Rodman, T., and Pastor, B. H.: Control of Anticoagulant Therapy with the Thrombotest, *J.A.M.A.* 180:739, 1962.
3. Wright, I. S., Beck, O. F., and Marple, C. D.: Myocardial Infarction and Its Treatment with Anticoagulants: Summary of Findings of 1031 Cases, *Lancet* 1:92, 1954.
4. Peyman, M. A.: Significance of Hemorrhage During Treatment of Patients with Coumarin Anticoagulants, *Acta med. Scandinav.* 162(Suppl.): 339, 1958.
5. Pastor, B. H., Resnick, M. E., and Rodman, T.: Serious Hemorrhagic Complications of Anticoagulant Therapy, *J.A.M.A.* 180:747, 1962.



#### WHAT NOW?

If we hear correctly, Kennedy and his travelling circuses, from Madison Square Garden to lesser stands, had less than their anticipated success. These followed by an effective educational effort by the A.M.A. have apparently awakened an electorate to what all the talking is about. Again if reports are correct, the avalanche of mail to the legislators in Washington is almost unprecedented and with a two or three to one proportion against the King-Anderson bill.

Even though the administration has received its just comeuppance and the likelihood of immediate positive action on the King-Anderson bill is remote, the basic problems involved have not been altered and must be faced. An ever-expanding population of aged folks, hand-in-hand with constantly improving methods of giving medical care, face the profession and the people of this country with a costly prob-

lem, and because of this a highly potent political torch with which to inflame an electorate.

These facts have been considered repeatedly on these pages over the past decade. The problems are essentially unchanged, and if changed, mainly in magnitude and in political acuity.

Having gained a respite from the threat of governmental control in the care of the aged, what is going to be done to blunt the next political thrust which is certain to come? The medical profession should assume the lead, and promptly in three areas—

(1) Extension or expansion of the services possible under the Kerr-Mills bill. Limitation in financial income is part and parcel of aging, illness, and retirement, and of serious degree for the majority of the aged. The Kerr-Mills bill offers the means of providing hospital and allied benefits to the needy. All the specious palaver about "insult to human dignity" by accepting such aid is sheer nonsense. Lessening of financial burdens for older persons has had long acceptance. I doubt that our vociferous politicians and others feel a threat to their dignity when the income tax permits certain deductions because of age, or the country club reduces its dues! Considerations for the aged go back even to ancient times—a philosophy that the aged person has contributed to the workaday world and now deserves recompense and recognition. In Tennessee the medical profession has twice within a year urged extension of benefits under the Kerr-Mills bill—a gradual extension as the need is demonstrated, so much better for beneficiaries and tax-payers alike than the "whole hog" approach used in some states with imminent bankruptcy from its implementation.

(2) The development and/or extension of home nursing services. Almost any doctor will admit that if he could be assured of ideal medical care for patients in the home, the need for hospitalization could be greatly reduced. To my mind this is a need equal to that of provision for hospitalization. This too has been commented upon in the past on these pages. Such practices are well established in some areas in the country and much experimentation with this is going on

in others. The medical profession should assume the lead, and in collaboration with local health departments, develop home-care to keep the home-bound happier in their environment than in a noisy hospital ward.

(3) The extension of voluntary health insurance and its implementation for the aged. Shortly the members of TSMA will have the opportunity to demonstrate their sincerity in their desire to counter an extension of government into the practice of medicine, and in the acknowledgment that a financial burden exists in medical care for the aged. They will be asked to become participants in the *Tennessee Senior Citizens Plan* as sponsored by TSMA.

It may be recalled that the House of Delegates in 1961 approved a fee schedule of 25% less for those over 65 years than in the existing *Tennessee Plan*, if underwriters reduced their rates. The latter proviso was attended by certain difficulties, but in spite of this the Prepaid Health Insurance Committee kept on in its attempt to provide an insurance plan for the oldsters. The following excerpts from Resolution No. 10, adopted by the House of Delegates in April of this year deserve repetition (see this Resolution in its entirety—J. Tennessee M.A. 55:238 (June), 1962:

"WHEREAS, the Tennessee State Medical Association recognizes an existing need for satisfactory medical and surgical coverage for its senior citizens, and

"WHEREAS, it feels that in a free economy competition is essential to achieve the best results, now therefore be it

"RESOLVED, that the TSMA House of Delegates approve the recommendation of the Prepaid Health Insurance Committee to accept the National Blue Shield Senior Citizens Plan, . . . and be it further

"RESOLVED, that the program in Tennessee shall be known as the Tennessee Senior Citizens Plan, and that doctors of Medicine in Tennessee be asked to become participating physicians in the plan, which will be separate and apart from the existing Tennessee Plan, and be it further

"RESOLVED, that the House of Delegates of the Tennessee State Medical Association strongly encourage insurance carriers to develop and offer appropriate plans for the care of elderly Tennesseans of low economic status, and be it further

"RESOLVED, that the Prepaid Insurance Committee is hereby instructed to set up a plan to be known as the Tennessee Senior Citizens Plan. This plan is to have provisions that are the same



as or better than the National Blue Shield Senior Citizens plan. Any such plan proposed by an insurance carrier is to be submitted to the Committee and accepted or rejected in the same fashion now used for the Tennessee Plan. . . ."

At about the time you read this editorial there will appear on your desk a brochure, similar to that used for the regular *Tennessee Plan*, but entitled *The Tennessee Senior Citizens Plan*. You are requested by your Association to become a participating physician by signing and returning your card to the TSMA office. By this action you do more than by any other means toward weakening the politicians' threat of government in medicine.

Yes, it is granted that you have always given consideration to the needy in your fees and as an individualist you do not wish to sign on the dotted line and abrogate your rights to deal with patients as you please. But this is 1962, power politics is in the saddle as never before; the days of playing a lone hand are gone. Power politics must be met by a united front. Numbers speak—the percentage of signers as participating physicians in the new *Plan* represents concrete evidence of our stand in the eyes of our allies,—our Representatives in Congress and the Tennessee Farm Bureau Federation within the state. These mean more than protestations of intent. And, if you are irked by son's *Thunderbird* but irresponsibility for papa's medical bill, educate son to buy papa an insurance policy by playing on his selfish motives.

The medical profession of the Volunteer State can be proud of its leadership in accepting social responsibilities. Through its officers and its House of Delegates it has done much. It sponsored and had passed its unprecedented bill for the Hospitalization of the Indigent. Our critics both within and without the profession possibly would have been surprised and certainly warmed by the almost unanimous adoption by the House of a "no-fee" policy under the Kerr-Mills bill. And the TSMA was a leader years ago in the advancement of voluntary health insurance through its *Tennessee Plan*.

The officers and members of the House of Delegates again expect the members of the Association to meet the challenge of medical care for the needy, this time the aged

under the *Tennessee Senior Citizens Plan*. And if it still rankles to act other than as an individual, one might contemplate the news headlines, "*Saskatchewan Doctors Determined—Medicine Strike Looms*, . . . as North America's first socialized medicine health plan goes into effect."

Is it not better to offer a united front on a positive stand in the hope of avoiding the need for negative action!

R. H. K.



## Special Item

### Syphilis—Today

Recent events have revealed quite dramatically that, in contrast to common belief, syphilis is far from being a dead disease. The U. S. Public Health Service reports that syphilitic infections nationally has tripled since 1957. The 18,781 cases of infectious syphilis in fiscal 1961 is the highest number recorded in eleven years and represents a 50.6% increase over the comparable 1960 total of 12,471.

As part of the national picture Tennessee is no exception. During the calendar year 1960 there were more cases of infectious syphilis (448) reported in the State than in any year since 1951. There were 21 cases fewer in 1961 than in 1960, with more than half of the 427 cases reported in the age group under 25, to make this past year the second highest in a decade. Since the low year of 1956, the incidence of infectious syphilis has more than doubled. In 1961, thirty-six of the State's ninety-five counties reported one or more cases of infectious syphilis. Private physicians reported 19% of the 427 cases of infectious syphilis in 1961.

Last year the creation of a Study Group was ordered by the House Appropriations Committee in its report on the budget of the Department of Health, Education and Welfare. The report expressed particular concern over evidence of the unknowing spread of syphilis, particularly among teenagers; evidence that the number of cases far outnumber reported cases; evidence that effective technics to control and stop the spread of syphilis were available but not

\*From the State of Tennessee Department of Public Health, Nashville, Tenn.

applied widely enough; and evidence that syphilis would continue to spread unless a vigorous, stepped-up program was begun.

The five member Study Group recommended to Surgeon General Luther L. Terry a six point program which contained the elements to eradicate syphilis as a public health problem within ten years.

The consensus of this Task Force was that the rising trend of infectious syphilis can be reversed through intensification and further improvement of the case-finding process, through quicker access to, and use of operational information, through increased participation in venereal disease control by private physicians, and efforts in education on venereal disease. It will require a high index of suspicion among and better morbidity reporting by private physicians. It will require speedier case-finding, improved interstate communications, more complete interviewing and re-interviewing, and extension of the interview to include all patients suspects and associates. It will require an informed public, active support of community leaders and an aggressive effort to keep the facts before both groups, as well as a higher level of co-operation between all public, private and hospital laboratories doing blood tests.

The six program activities to be adequately coordinated and continued unabated for at least ten years are:

- (1) An intensive effort to enlist the private physicians and their professional societies and associations in the control effort, providing for at least two visits per year by a qualified venereal disease control worker to 100,000 general practitioners in the country and one visit a year to the remaining 130,000 physicians. The primary purpose of these visits will be to show each physician how the program works to eliminate syphilis and to enlist his cooperation in reporting cases and permitting his patients to be interviewed.
- (2) Establishment of a program to insure that all blood-processing laboratories report all positive specimens to health departments by name of patient.
- (3) Intensification and extension of current interview-investigation services

to cover all infectious syphilis cases.

- (4) Development of a comprehensive and dynamic educational program for professional workers and the general public.
- (5) Continuation of research in syphilis immunology, therapy, and laboratory procedures, together with greater expansion of research in the sex behavior of adolescents and young adults.
- (6) Unstinted support of the program by Federal, State and local governments even after the reported number of syphilis cases begins to decline.

The team of sixteen highly trained venereal disease investigators presently strategically assigned under the auspices of the Tennessee Department of Public Health in such a way that every county has expert, confidential early syphilis case-finding service readily available, is being strengthened through the addition of four Public Health Service specialists. All of these men will work with and be on constant call to all physicians, hospitals and laboratories in the State. They also will be readily available through local health departments to meet with local medical societies and professional groups in discussion of the program goals and methods. A number of films, prepared specifically for the medical profession, which very effectively present the technics for the identification of early syphilis can be obtained for group viewing at no cost through health departments or the film library of the Health Education Division of the State Health Department.

Every physician in Tennessee is urged to join forces with this public health team in the important task of eradicating syphilis from every county in the State as soon as it is humanly possible to do so.

## DEATHS

**Dr. Douglas C. Seward**, 68, Nashville, died May 15th at his home. His death was the result of a heart attack. Dr. Seward served 18 years as a Councilor for the Tennessee State Medical Association.

**Dr. Leopold Shumacker**, 77, Chattanooga, died June 1 in Erlanger Hospital.

**Dr. T. Hugh Young**, 71, Nashville, died May 27 at Baptist Hospital.



**Dr. James P. Anderson, Sr.**, 57, formerly of Nashville, died May 22nd at Thomasville, Georgia.

## PROGRAMS AND NEWS OF MEDICAL SOCIETIES

### Roane-Anderson County Medical Society

The regular monthly meeting of the medical society was held on June 26th in the Cafeteria of the Oak Ridge Hospital. The meeting was preceded by a dinner. The scientific program consisted of a paper entitled "Current Trends in Cancer Research," by Dr. Arthur C. Upton. It was announced that the annual picnic of the society would be held on July 14th at the home of Dr. Henry B. Ruley in Oak Ridge.

### Knoxville Academy of Medicine

The regular monthly meeting of the society was conducted in the Academy Building on June 12th. The scientific program consisted of a panel discussion on "Genital Carcinoma in the Female" presented by the American Cancer Society.

### Washington-Carter-Unicoi Medical Society

#### Sullivan-Johnson County Medical Society

A joint meeting of the Washington-Carter-Unicoi and the Sullivan-Johnson County Medical Societies was held concurrently with the Appalachian Heart Chapter, an affiliate of the Tennessee Heart Association, on June 14th at the Johnson City Country Club.

Guest speakers included Dr. Edgar A. Hines, Jr., Medical College of South Carolina who spoke on "The Evaluation of Atherosclerosis of the Extremities"; Dr. E. Stanley Crawford, associate professor of surgery at Baylor University School of Medicine, Houston, Texas, discussed "Newer Surgical Techniques in Management of Cerebrovascular Diseases"; and Dr. Chilton Crane, assistant clinical professor of surgery, Harvard Medical School, Boston, who spoke on "Controversial Subjects on Surgical Management of Varicose Veins." The program was approved for Category I Credit by the American Academy of General Practice.

### Chattanooga-Hamilton County Medical Society

The Society conducted its annual outing and barbecue on June 5th, at the Chattanooga Rod and Gun Club. This was an annual affair of the society.

### Weakley County Medical Society

A testimonial dinner for Dr. H. G. Edmonson, Martin, was held May 18th at the Gateway Restaurant in Martin. The dinner was sponsored by the Medical Society in recognition of Dr. Edmonson's fifty years of service in the practice of medicine.

### Memphis-Shelby County Medical Society

The Memphis and Shelby County Medical Society met in the Institute of Pathology on June 5th. The speaker was Mr. Elwood L. Edwards, attorney, who spoke on the recent tax laws regarding physicians' retirement. A question and answer session followed the presentation. Following the meeting of the Society, the House of Delegates held its regular monthly session.

## NATIONAL NEWS

### The Month in Washington (From the Washington Office of AMA)

The American Medical Association challenged the Kennedy Administration on the accuracy and legality of its propaganda campaign for the King-Anderson bill.

Dr. F. J. L. Blasingame, executive vice president of the AMA wired Attorney General Robert Kennedy about a booklet issued by the Department of Health, Education and Welfare. Dr. Blasingame said:

"This booklet lobbies for the enactment of the King-Anderson bill. This bill would raise social security taxes to provide limited health services to aged beneficiaries, regardless of whether they need financial help.

"The Department of Health, Education and Welfare has used tax funds, collected from everyone, to propagandize for a bill which many people and many groups have vigorously opposed. Under law, the publishing of this kind of a booklet without Congressional authority is a criminal act,

punishable by fine or imprisonment, or both, and removal from office."

AMA President Dr. Leonard W. Larson wrote President Kennedy correcting a misstatement the Chief Executive made at a news conference.

The President told his news conference that "the AMA was one of the chief opponents of the Social Security system in the 30's."

Dr. Larson pointed out to Mr. Kennedy that the American Medical Association had never opposed the Social Security system, either before or after its adoption.

"The Association," Dr. Larson's letter said, "testified before Congress on only one section of the Social Security legislation, the section concerning extension of public health services. It should be noted that the AMA testified in support of this section."

Dr. Blasingame also called on the Justice Department to stop Cabinet members using taxpayers' money for lobbying purposes and to launch an investigation of "improper" lobbying activities of employees of the Department of HEW.

Dr. Blasingame in a letter to Attorney General Robert Kennedy listed more than a dozen incidents which he said violated federal statutes prohibiting lobbying by federal employees and officials.

"Government employees," Dr. Blasingame said, "are being sent out as speakers, at public meetings to urge enactment of the Administration's bill. This, in our opinion, is a clear violation of Title 18, Section 1913 of the U. S. Code on crimes and criminal procedure which prohibits among other things the use of 'personal services' for lobbying purposes."

Dr. Blasingame said that Secretary of Commerce Luther Hodges, Secretary of Labor Arthur Goldberg and Interior Secretary Stewart Udall were appearing at rallies concurrent with President Kennedy's appearance in Madison Square Garden in the Administration's campaign for the King-Anderson bill.

"We strongly protest the use of tax monies by these Cabinet members to lobby for a bill which is clearly not within the scope of their respective departments," Dr. Blasingame said. "I call on you to issue an in-

junction against this type of activity by these Cabinet members."

The AMA Executive Vice President also noted that between six and ten government employees "have been lobbying in the White House offices for several months" for the King-Anderson bill. He said the group occupying a four-room suite "has been writing television and radioscripts, drafting advertisements and helping with publicity releases for various organizations which are backing the King-Anderson bill."

Dr. Larson also urged that "the American people demand an honest accounting from the Department of Health, Education and Welfare on how much of their tax money the department is spending on lobbying for the King-Anderson bill."

"The people have a right to know how much of their tax money this federal agency is spending in lobbying for this piece of legislation," Dr. Larson said in a speech before the Academy of Medicine of Cincinnati.

Dr. Larson said also that the National Council of Senior Citizens should be required to register as a lobbyist.

"This organization was founded by former Congressman Aime Forand for the express purpose of lobbying for passage of the King-Anderson bill," Dr. Larson said.

In a statement, Dr. Larson cited contradictory statements by two prominent advocates of President Kennedy's health-care-for-the-aged bill—Ribicoff and Rep. Cecil R. King (D., Calif.).

"Mr. Ribicoff and Mr. King may be on the same team but they are in basic disagreement as to the extent of services social security should provide, and how much of an increase in taxes the public will tolerate to finance these services," Dr. Larson said.

Dr. Larson said: "This is what is happening, Secretary Ribicoff, in an effort to make the King-Anderson bill palatable to those fearing greater Federal taxes, is saying that the health care program will not be expanded because social security taxes have just about hit 10 per cent—his estimate of the saturation point.

"Meanwhile, Mr. King, in order to gain the support of those who believe in the 'Federal government playing the role of



Santa Claus' is promising increased social security benefits in the future."

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The American Medical Association opposed legislation that would permit beneficiaries of the Federal Employees' Compensation Act to utilize services of chiropractors.

In a letter to the chairman of the Senate Subcommittee on Employees' Compensation, Dr. F. J. L. Blasingame, AMA executive vice president, said: "Chiropractic is a pseudoscience which is not based on scientific methods, and therefore, should be recognized as what it is—a theory of cultism. It is premised on the theory that human illness is all related to the spinal column. It holds that the nerves that emanate from the spinal cord become impinged or "pinched" by the vertebrae, thereby causing malfunction and disease.

"As a result of this theory, chiropractors claim that disease and illness such as allergies, diabetes, heart trouble and tonsillitis, to name a few, can be cured by adjusting or manipulating the spinal column. Such a theory, of course, runs counter to the established facts of medical science. . . .

"Chiropractors are not educated or equipped by either background or training to diagnose human illness. This inability to render a diagnosis coupled with their pseudo-scientific method of treatment, when taken into consideration in connection with their vociferous stand against life-saving vaccines and wonder drugs, precludes that any consideration be given them."

## MEDICAL NEWS IN TENNESSEE

### Upper East Tennessee Pediatric Association

The Upper East Tennessee Pediatric Association held its regular meeting in Gatlinburg, Tennessee on June 9th. Dr. J. R. Bowman, Johnson City, president of the Association, announced that the guest speakers included Dr. Samuel P. Livingston, director of the Seizure Clinic of Johns Hopkins Hospital, Baltimore, and Mr. David C. Bailey, an accountant, who spoke on investments.

**Tennessee Hospital Association**  
More than 500 hospital officials represent-

ing some 150 hospitals throughout Tennessee met in Chattanooga on May 21st and 22nd for the 24th annual convention of the Association. The meeting was conducted in the Patten Hotel.

Among the prominent list of guest speakers was Dr. Wm. J. Sheridan, Chattanooga, President of the Tennessee State Medical Association, who spoke on the subject, "What a Doctor Expects from Hospital Administrators and Hospital Trustees."

### Central State Hospital Program on Mental Health

The relationships between mental hospitals and the psychiatric problems encountered in medical practice was the general subject discussed at a conference on May 24th at Central State Hospital. The program, especially designed for family physicians, was co-sponsored by the Tennessee Department of Mental Health and the Central State Hospital, in cooperation with Vanderbilt University School of Medicine.

One of the principal speakers was Dr. Leo Bartemeir, medical director of Seton Institute in Baltimore, and a member of the Joint Committee on Mental Illness and Health established by Congress several years ago. Dr. Bartemeir spoke on the subject "The Physician as a Leader in 'Action for Mental Health'."

Other subjects discussed included: illnesses with strong emotional relationships, psychiatric emergencies, alcoholism, mental deficiency, training opportunities in the field of psychiatry, and cooperation between the minister and the family physician.

The faculty for the all-day program included the Commissioner of Mental Health, Dr. Joseph J. Baker; Dr. Robert T. Adams, professor of psychiatry at Vanderbilt; Dr. Frederick T. Billings, associate clinical professor of medicine at Vanderbilt; Dr. Joseph E. Denniston, superintendent of Clover Bottom Hospital and School; Dr. Frank H. Luton, clinical director of Central State Hospital; Dr. E. Calvin Moore, superintendent of Central State Hospital; Dr. William F. Orr, Vanderbilt professor of psychiatry; and Dr. Albert Weinstein, Vanderbilt Clinical professor of medicine.

**Symposium on Cardiology**  
Erlanger Hospital, Chattanooga, recently

sponsored a three-day symposium on subjects related to surgical cardiology. The meeting was held May 17-19.

Dr. J. Francis Dammann of the University of Virginia Medical Center, Charlottesville, Virginia, was the principal speaker.

### Vanderbilt University School of Medicine

Vanderbilt University School of Medicine has been awarded \$11,326 for equipment for medical and clinical research facilities. The grant was made by the Public Health Service. Vanderbilt had previously been awarded \$228,896 for a new research building.

### Meharry Medical College

Meharry Medical College was awarded \$140,812 federal grant to help build and equip a new science wing. The grant will assist in Meharry's research activities by providing additional space for faculty members and for new research specialists who will be joining the staff soon.

Officials of Meharry have also announced that construction has begun on a five-story, 111-bed addition to Meharry Medical School's Hubbard Hospital. The new wing will cost \$1,331,455 and is expected to be completed by June or July of 1963.

### University of Tennessee College of Medicine

The University of Tennessee Medical Units will set up a new division in the College of Pharmacy—to be called the Division of Industrial Research—under a \$178,000 grant. The gift from Marion Laboratories, Inc., Kansas City, was announced by Dr. Homer F. Marsh, vice president in charge of the Medical Units. Dr. Marsh hailed the program as a new concept in cooperative research between an industry and a college.

★

A noted virologist, Dr. Allan Granoff, has been appointed associate professor of microbiology at St. Jude Hospital and the University of Tennessee Medical Units.

### Health Benefits Up in All 50 States

Each of the nation's 50 states showed an increase during 1961 in the amount of health insurance benefits received from insurance companies, the Health Insurance Institute reported recently.

Nearly \$860 million were paid to people last year in the 16 southern states of Alabama, Arkansas, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, West Virginia and the District of Columbia. This represented an 11.5 per cent climb over the 1960 benefits of \$771 million.

In the State of Tennessee, it was reported that \$62,278,000 was the amount of benefits paid, a 13.7% increase over 1960.

## PERSONAL NEWS

**Dr. David McCallie**, Chattanooga, has assumed the presidency of the Tennessee Heart Association. He succeeds **Dr. Joseph E. Acker, Jr.** of Knoxville.

The medical staff of the Junior League Home in Nashville has elected the following officers: **Dr. J. W. Hillman**, chairman; **Dr. Thomas Weaver**, vice chairman; **Dr. B. F. Byrd, Jr.**, secretary; **Dr. Thomas Parrish**, chairman of orthopedic services; and **Dr. Ethel Walker**, chairman of medical services.

**Dr. Edward G. Barker**, Trenton, has been elected president of the medical staff of St. Mary's Hospital in Humboldt. **Dr. George E. Spangler**, Humboldt was chosen vice president and **Dr. Harold G. Baker**, Secretary.

**Dr. M. M. Young**, Crossville, has been awarded the degree of Master of Public Health by the University of North Carolina.

**Dr. J. D. McCown**, Memphis, has announced that he is joining the Ripley Clinic in Ripley.

**Dr. Eugene W. Fowinkle**, Whitehaven, will head the division of communicable disease of the Memphis and Shelby County Health Department, Dr. Nobel W. Guthrie, assistant director, announced.

**Dr. William H. Edwards**, Nashville, was the recent speaker before the Lions Club in Centerville.

**Dr. A. J. Von Werssowetz**, Chattanooga, is chairman of the fair committee for the health exhibit of the Chattanooga-Hamilton County Health Council.

**Dr. Dexter L. Woods, Jr.**, Waynesboro, recently addressed the heart association at Lawrenceburg.

The following Macon County doctors made changes on July 1: **Dr. C. C. Chitwood**, Lafayette, will begin a surgical residency at the Erlanger Hospital in Chattanooga; **Dr. Jim Lane** will open an office for the practice of medicine in Jackson; **Dr. M. E. Painter** will move to the Smith-Chitwood hospital; **Dr. E. M. Froedge** will continue to practice medicine and surgery at the Painter-Froedge Clinic; and **Dr. Jack Clark** will open his office for the practice of medicine in Lafayette.

**Dr. Samuel L. Raines**, Memphis, has been



named president-elect of the American Urological Association at a recent meeting in Philadelphia. He will assume the presidency in 1963.

**Dr. William N. Jernigan**, Columbia, has been elected a Fellow of the American Academy of Pediatrics.

**Dr. Joseph E. Acker, Jr.**, Knoxville, was a recent guest speaker at the Appalachian Heart Chapter meeting in Kingsport.

**Dr. Jacob Bradsher**, Knoxville, has been named president-elect of the East Tennessee Heart Association. **Dr. Freeman L. Rawson**, Knoxville, was installed as president for the coming year.

**Dr. Robert M. Miles**, Memphis, was elected president of the Memphis Surgical Society to succeed **Dr. Francis Cole**. **Dr. Nicholas Gotten** was elected vice president and **Dr. William T. Tyson, Jr.**, secretary-treasurer.

**Dr. James J. Callaway**, Nashville, has been installed as president of the Middle Tennessee Heart Association. Others elected were **Dr. Fred Goldner, Jr.**, Nashville, vice president and **Dr. John H. Beveridge**, Nashville, secretary-treasurer.

**Dr. Chas. E. Taylor**, Lawrenceburg, has been named president-elect of the Middle Tennessee Medical Association. **Dr. Arnold Meirowsky**, Nashville, is secretary of the group.

**Dr. R. David Taylor**, Dyersburg, has been named president-elect of the West Tennessee Heart Association. **Dr. Lamb B. Myhr**, Jackson, was installed as president.

**Dr. Nobel W. Guthrie**, Memphis, has been awarded a fellowship from the World Health Organization and will spend three months in Europe this fall.

Several Chattanooga physicians will participate in the medical self-help program, a civil defense project. **Dr. Arthur J. Von Werssowetz** is in charge of the project. Other physicians participating include **Dr. Harold Sibold**, **Dr. Rudolph Landry**, **Dr. Alfred P. Rogers**, **Dr. David McCallie**, **Dr. Pope Holliday**, and **Dr. Paul Johnson, Jr.** The program has the full support of the Chattanooga-Hamilton County Medical Society.

**Dr. Daniel H. Framm**, Chattanooga, has been elected a Fellow in the American Academy of Pediatrics.

Three Nashville physicians recently addressed the cardiac nursing conference at St. Thomas Hospital. They were: **Drs. Bruce Sinclair-Smith**, **Malcolm Lewis**, and **Sam E. Stephenson**.

**Dr. Henry H. Long** and **Dr. Robert W. Meadows**, both of Knoxville, have been elected Fellows of the American Academy of Pediatrics.

**Dr. Bradley S. Trewhitt**, Cleveland, will go to Erlanger Hospital in Chattanooga on July 1st to begin a two-year residency in anesthesiology.

**Dr. J. Lynnwood Herrington**, Nashville, was a recent guest speaker at the Surgical Section of the Louisiana State Medical Society meeting in Monroe, Louisiana.

**Dr. Searle McMurray** has joined **Dr. Bruce B. Bellomy** in the practice of pathology in Knoxville.

**Dr. Lee F. Cayce**, announces the removal of his

office to 403 Mid-State Medical Center in Nashville.

## BOOK REVIEW

**OFFICE DIAGNOSIS.** By Paul Williamson, M.D. W. B. Saunders Co., Philadelphia. 461 pages. Price \$12.50.

Doctor Williamson must hold the world's record for simplification of pertinent diagnostic criteria. Office Diagnosis presents to the general practitioner a usable, functioning set of principles governing the management of the diagnosis of a wide range of disease processes.

To be commended are his frequent warnings as to when to stop and when to proceed further in diagnostic surveys. Also his cryptic comments referable to the prognosis—good, poor, refer, or do nothing when nothing is needed.

Those practitioners who read, used, enjoyed, and benefitted from his previous Office Procedures, will find that this volume complements it adequately.



**NEW AND NONOFFICIAL DRUGS 1962.** Published by the Council on Drugs of the American Medical Association. Philadelphia: J. B. Lippincott Company, 1962. Price \$4.00.

The reviewer is glad, annually, to call attention to this volume which is published each year by the American Medical Association's Council on Drugs. For the practicing physician there is no better reference book to turn to for advice than this. Its content remains abreast of the new drugs which have appeared on the market.

The listing of drugs in the New and Nonofficial Remedies does not mean that they are recommended as useful drugs, but merely indicates that the drug is available. There is no other source to which the physician may turn to receive an acceptable listing of new drugs. The reviewer can think of no better advice than to recommend to each practitioner of medicine to have this reference book on his office bookshelf.

## ANNOUNCEMENTS

### Tennessee Academy of General Practice 14th Annual Scientific Assembly

The Tennessee Academy of General Practice will conduct its 14th Annual Scientific Assembly, October 25-26, 1962, in the Hermitage Hotel, Nashville. The following program will be presented.

Oct. 25 (Morning) Pediatrics

"Diagnosis of Allergy in Children"; "Recent Ad-

vances in Therapy of Allergy in Children"; "Emotional Factors of Allergy in Youth"; Panel Discussion of Questions, followed by intermission.

"Diagnosis of Pediatric Urological Problems"; "Management of Common Urological Problems in Children"; Panel Discussion of Questions.

#### **Oct. 25 (Afternoon) Medicine**

"Approach to Anemia Problems in Geriatrics"; "Sedation of Elderly Patient"; Panel Discussion of Questions—Intermission.

"Diagnosis of Thyroid Disease"; "Recent Advances in Therapy of Thyroid Disease"; "Surgical Treatment of Thyroid Disease" followed with Panel Discussion of Questions.

#### **Oct. 26 (Morning) Surgery**

"Examination of Rectum and Sigmoid"; "Management of Minor Rectosigmoidal Disorders"; "Management of Major Rectosigmoidal Disorders"—Intermission.

"General Anesthesia Techniques for the Part-Time Anesthetist"; "Complications Associated with Anesthesia"; Panel Discussion of Questions.

#### **Oct. 26 (Afternoon) Ob-Gyn**

(Film) "Simplified Approach to Complete Vaginal Repair"; "Delivery by Appointment"; "Indications for Cesarean Section"; Panel Discussion of Questions. Intermission.

"Indications for Contraceptive Procedures"; "Medico-Legal Aspects of Contraceptive Procedures"; "Emotional Aspects of Surgical Contraception"; Panel Discussion.

### **Interstate Offers Varied Program for GPs**

The 47th annual Scientific Assembly of Interstate Postgraduate Medical Association, to be held

at the Palmer House, Chicago, October 1-4, offers 20½ hours of varied teaching (and A.A. G.P. Category II Credit) for a registration fee of \$10. The program is especially suited to the needs of generalists, as all lectures, panels and clinics are closely related to medical problems familiar to the physician who does not devote his time to a single specialty.

Those interested in full details of the program are urged to write for a brochure, by addressing a post card to N. A. Hill, M.D., Secretary, Interstate Postgraduate Medical Association, Box 1109, Madison 1, Wisconsin.

### **National Bilirubin Survey**

In order to stimulate interest in the accuracy of Bilirubin determinations the College of American Pathologists Standards Committee announces a National Bilirubin Survey, available to all physicians and hospitals.

Accurate Bilirubin measurements are of great importance in decisions as to the need for exchange transfusion in newborn erythroblastosis fetalis; in the differential diagnosis of the various icteric syndromes in patients of all ages; and in evaluating prospective blood donors.

Participants will first receive a set of survey samples. Following the survey, a critique of Bilirubin Standards and methods of analyses will be provided. Questions arising during the survey may be directed to the Committee.

Those who wish to participate in this Bilirubin survey may do so by sending \$8 to the Standards Committee, College of American Pathologists, Prudential Plaza, Chicago 1, Illinois. Applications must be received not later than August 1, 1962.



## OFFICERS OF SPECIALTY SOCIETIES

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 PRESIDENT-ELECT: G. Baker Hubbard, M.D., Jackson Clinic, Jackson  
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## The Clinical Evaluation of Adnexal Masses\*

LAWRENCE L. HESTER, JR., M.D.,† Charleston, South Carolina

*If care is used in taking a good history and in doing a pelvic examination, most pelvic masses can be evaluated correctly.*

The preoperative diagnosis of adnexal masses is more accurate as one becomes more experienced, and if certain routine steps are carried out before reaching a final diagnosis. Too often some minute detail in the history, abdominal, or pelvic examination is overlooked with inaccurate deductions, and an incorrect diagnosis. Also, too much importance may be attached to an isolated point in the patient's history which is not substantiated by one's findings on pelvic examination. Likewise one may be influenced too much by the pelvic findings and not enough by the history.

In taking the history, it is important to "let the patient talk"; however, there must be some limits with the verbose patient. Too often the physician asks questions which provoke "yes" or "no" answers, and the patient is not allowed to relate the sequence of events that made her seek medical help. In brief the menstrual, reproductive, and operative history of the patient should be obtained. Gastrointestinal symptoms, or changes in bowel habits, genitourinary symptoms, and complaints of dyspareunia, decreased libido, etc. must be sought after, since very few patients will

volunteer this information at the initial interview. History of recent weight loss, defeminization, or masculinization, increase in the girth of the abdomen, vaginal discharge, pain, and fever must be obtained. If the patient's chief complaint is pain, then she should be questioned regarding its origin, whether dull or sharp, and if there have been previous attacks. Is the pain relieved by change of position or lying down, does it occur at a certain time of the menstrual cycle, and is it made worse by intercourse?

Too often not enough time is allowed for the history, and just as often the physician obtains an inaccurate history by his method of questioning. One must remember that to many patients a visit to the physician's office is an important and emotional event in her life. The answers are given under stress, and perhaps not as accurately as either the physician or patient would wish. As the patient becomes more relaxed or knows her physician better, there is likewise an increase in the accuracy of her history.

The pelvic examination should begin with an examination of the breast. Visual examination will reveal whether they are well developed, over-developed, or atrophied. One also looks for increased vascularity, Montgomery's follicles, and whether the nipples are erect, flat, or inverted. Palpation of the breast tissue is carried out in a clockwise or counter-clockwise direction, so the entire breast is included, for masses, discrete nodules, and tenderness. A search is also made for super-numerary nipples and breast tissue, and the axilla is thoroughly palpated for lymph nodes.

The abdomen is next examined by inspection, palpation, percussion, and auscultation.

\*Read at the meeting of the Tennessee State Medical Association, April 11, 1962, Memphis, Tenn.

†From the Department of Obstetrics and Gynecology, Medical College of South Carolina, Charleston, South Carolina.



tation. Inspection will reveal such abnormalities as an asymmetrical contour, an unusual prominence, or abnormal distribution of pubic or abdominal hair. Abdominal striae will indicate previous pregnancies, and operative scars are noted for location and hernias. Palpation will reveal the thickness of the abdominal wall, areas of tenderness, abdominal masses, and displaced organs. The site of the tenderness should be noted, and whether or not any rebound or referred tenderness is present. The abnormal masses should be palpated for firmness or fluctuation, tenderness, mobility, or fixation, nodularity or smoothness, and their location.

Percussion as an aid in the diagnosis of adnexal masses is rarely used but has a distinct place. It is of great value in differentiating between ascites and a large ovarian cyst. Percussion of the abdomen with the patient in the supine position will reveal dullness anteriorly over the cyst, and tympany in the flanks; whereas, with ascites tympany will be present anteriorly and dullness in the flanks. Shifting dullness in the flanks is also characteristic of ascites. Auscultation of the abdomen may reveal fetal heart sounds or a uterine souffle, and thus rather quickly differentiates between a large ovarian cyst and an intra-uterine pregnancy.

Pelvic examination includes vaginal, vagino-abdominal, rectovaginal, and rectovaginal abdominal examination. The vaginal examination is begun by a careful inspection of the vulva including the urethral meatus, Bartholin glands, and the perineum. The vaginal mucosa is palpated as is the uterine cervix. The cervix is then visualized with the aid of a speculum and the vaginal mucosa is seen as the speculum is withdrawn from the vagina. By palpating the cervix, one should be able to determine in almost every instance the position of the uterus. If the cervix points towards the symphysis pubis, the uterus will be in the cul-de-sac, whereas with the cervix pointing posteriorly, the uterus will be anteverted. After the cervix has been palpated for firmness, lacerations, position, and whether or not the external cervical os is dilated or closed, the body of the uterus is felt on bimanual examination. The uterus

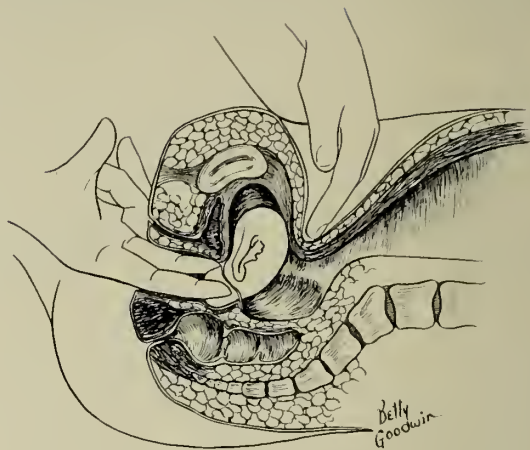
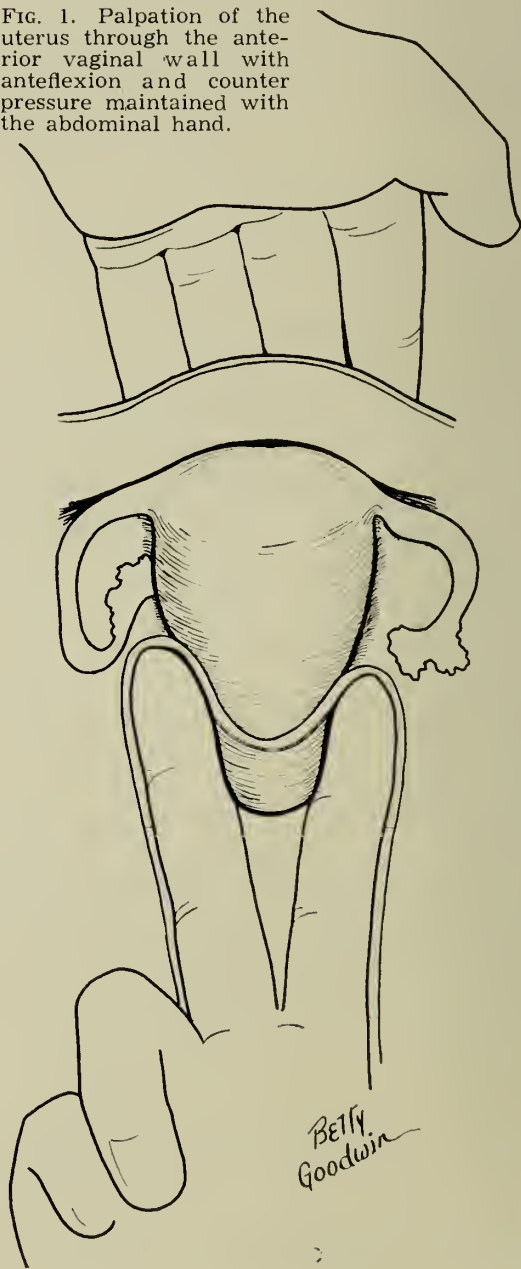


FIG. 1. Palpation of the uterus through the anterior vaginal wall with anteversion and counter pressure maintained with the abdominal hand.



is then palpated for size, position, contour, and mobility. It is to be emphasized that on bimanual examination, the uterus is best felt through the anterior vaginal wall as seen in figure 1. This is almost the only way that a uterus can be felt in an obese person with a thick abdominal wall, but it can be used just as satisfactorily in a thin individual. The abdominal hand in the bimanual examination is merely to keep the uterus anteflexed and to exert counter pressure against the vaginal hand not only in examining the uterus, but in the palpation of the ovaries, ovarian cysts, and masses in the adnexum. The cul-de-sac is then palpated for nodularity, fluid, and unusual masses. Lastly, the cervix is moved in an anteroposterior manner to detect any unusual abdominal tenderness which would be associated with hemorrhage into the abdominal cavity or with pelvic peritonitis.

Rectovaginal, or better rectovaginal abdominal examination, completes the pelvic examination. Pressure by the patient against the rectal finger will decrease the tenderness associated with the examination. Rectovaginal examination is essential in outlining the uterus which is retrodisplaced. The rectal finger can detect nodularity in the uterosacral ligaments, fluid in the cul-de-sac, and will give a better estimate of the size of the ovarian cyst than a vaginal examination. Blood in the cul-de-sac is more easily detected, and a chronic ruptured ectopic pregnancy will be suspected or diagnosed more often.

There are certain other examinations or tests that will aid in arriving at a correct diagnosis of the adnexal mass. These examinations and tests are:

1. Cervical biopsies
2. Papanicolaou smears
3. Vaginal and uterine cultures
4. Sounding of the uterus
5. Endometrial biopsies
6. Proctoscopic and sigmoidoscopic examination
7. Culdocentesis
8. Culdoscopic examination
9. Repeat pelvic examination
10. Pelvic examination under anesthesia
11. X-ray examinations
  - A. Hysterosalpingograms
  - B. Plain film of the abdomen
  - C. Intravenous pyelograms
  - D. Examinations of the gastrointestinal tract
  - E. Pneumoperitoneum with x-ray visualization
12. Fractional uterine curettage
13. Exploratory colpotomy
14. Laparotomy

A second pelvic examination several days or a week after the initial examination may be quite helpful in confirming the presence of an adnexal mass. Examination under anesthesia is not resorted to often enough in children, or in the virginal female in determining whether a mass is present or not, and if present, its origin. The sounding of the uterus is helpful on occasions in determining whether the large mass is uterine in origin, or whether the uterus is of normal size and a solid ovarian tumor is also present. Exploratory colpotomy is useful in differentiating between pelvic inflammatory disease and the chronic ruptured ectopic pregnancy. It should not be used when carcinoma is suspected since incisional seeding may occur.

At abdominal operation the adnexal mass should be inspected, and if torsion has occurred it should be removed without untwisting since this may result in the dissemination of emboli into the vascular stream. The adnexal mass should be inspected for its contour, whether unilocular, or multilocular, location, size, and whether or not surface implants are present. It should be palpated for its consistency and also whether or not it is fixed or mobile. The abdomen should be observed for the presence or absence of ascites; exploration of the abdominal cavity should be carried out as in any operation with palpation of the kidneys, liver, gall bladder, stomach, spleen, adrenals, pancreas, and bowel.

Further diagnostic studies may be carried out to provide helpful diagnostic information immediately, or at a later date which may aid in the diagnosis. Frozen sections may be done to determine whether or not an ovarian or fallopian tube malignancy is present. Frozen sections also may be utilized to determine the extent of the malignancy as to whether or not it has extended beyond the pelvis and to distant abdominal organs. If ovarian carcinoma is diagnosed



or suspected, peritoneal washings are examined to determine whether or not free carcinoma cells are in the peritoneal cavity. This is done with 250 cc. or 500 cc. of normal saline which is used to wash the abdominal cavity, aspirated in a separate container, and sent to the cytological laboratory. Since ovarian lesions are quite frequently bilateral, the other ovary should be dissected if it is not to be removed. This is mandatory when a benign dermoid is detected in one ovary, since they are bilateral in 25 to 40% of the patients. Lastly, the excised adnexal mass *must* be incised in the operating room so one can have a clinical impression as to its etiology and, if there is any doubt regarding whether or not it is

malignant, a frozen section or consultation with a pathologist can be obtained immediately.

### Summary

A careful and detailed history taken by the examining physician is an important aid in the correct diagnosis of adnexal masses. The value of inspection, percussion, auscultation, and palpation in the abdominal examination is stressed. Experience and a rectovaginal-abdominal examination increases the accuracy of a pelvic examination. Lastly, certain diagrams, tests and examinations are listed that may aid one in more accurately evaluating an adnexal mass.

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### PULMONARY-EMBOLIC DISEASE. Thompson, E. N. and Hamilton, M. *Lancet* 1:1369, 1962.

The hospital course of 47 patients with pulmonary embolic disease was described. The patients were divided into two groups on the basis of their presenting symptoms. Twenty patients were admitted after one or more large pulmonary infarcts with an illness resembling pneumonia. This was characterized by pleuritic pain, fever, cough, hemoptysis, and dyspnea. While 14 of the patients had clear-cut signs of venous thrombosis, there were 6 patients in whom the authors were unable to demonstrate with certainty the source of the emboli. All 20 patients received anticoagulants and all survived.

The remaining 27 patients were admitted because of frank cardiac failure or severe dyspnea. The duration of symptoms ranged from one week to two years. Only 4 of these 27 patients showed signs of venous thrombosis in the leg at the time of their admission to the hospital.

The cause of insidious cardiac failure in elderly patients is usually taken to be either hypertensive or ischemic heart disease. Hypertensive heart disease is often diagnosed in the absence of the criteria for the diagnosis of hypertension. Ischemic heart disease is a comforting diagnosis in that many patients over the age of fifty can confidently be expected to show some evidence of ischemic heart disease at necropsy even in the

absence of a significant clinical history, or of convincing electrocardiographic change.

The correct diagnosis of pulmonary-embolic disease can best be made by considering the salient features in the 27 patients presented with embolic cor pulmonale. Dyspnea is commonly severe and out of proportion to the other signs of heart failure. Radiologically the diagnosis was supported by the finding of either typical peripheral wedge-shaped areas of consolidation, or of areas of linear consolidation or atelectasis.

Once the condition has progressed to heart failure, treatment with anticoagulants has proved most disappointing, even when combined with energetic treatment of the cardiac failure.

Necropsy on all 20 fatal cases revealed two features. The lungs showed emboli of varying sizes lodged in the small pulmonary arteries of both lungs, and the leg veins in all cases were extensively thrombosed. The authors believe that the primary lesion was the thrombosis in the leg veins and that all the subsequent features of the disease were complications of this. Why venous thrombosis arises in otherwise healthy people remains obscure. The authors are convinced of the importance of early diagnosis of this disease, because anticoagulants at this stage may avert the progress of a disease which, if untreated, is often fatal. (Abstracted for the Middle Tennessee Heart Association by Oscar B. Crofford, M.D., Nashville, Tenn.)

In an aging population vascular occlusive disease becomes an ever-increasing problem to the family physician. The author has reviewed the several types with illustrative case reports, and has pointed up their management in a well documented fashion.

# Diagnosis and Management of Occlusive Disease of the Peripheral Arteries. Part I\*

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The diagnosis of occlusive disease of the peripheral arteries, like most problems encountered in the practice of medicine, depends first, on a high level of suspicion and interest by the physician, and second, on a relatively simple examination which can be carried out without the use of complicated apparatus.

The first step, therefore, is to elicit a careful and complete history of the patient's complaints. Symptoms which should arouse suspicion are pain, numbness or abnormal sensation of cold in the extremities, and especially intermittent claudication. Intermittent claudication may be described as a pain, ache, tightness, heaviness, fullness, cramping, or abnormal fatigue usually occurring in the calf of the leg, but may involve the arch of the foot, thigh, hip or buttocks depending on the level of arterial obstruction. The distress is induced by exercise or use of hypoxic muscles and subsides promptly on resting the affected muscles without change of position. Leg symptoms like those described in intermittent claudication of occlusive arterial disease may rarely result from arterial spasm induced by walking or associated with venous insufficiency. In severe ischemia there may be a persistent pain or ache at rest in the distal part of the extremity occurring particularly at night and associated with a sensation of numbness. Abnormal coldness or discoloration such as pallor, rubor or cyanosis, and atrophic changes of the distal extremities should arouse suspicion. The first symptoms of occlusion of the lower abdominal aorta (Leriche's syndrome) may be coldness, easy fatigability, weakness of the lower extremities, or loss of sustained erection. In occlusion of the lower abdominal aorta or iliac vessels, intermittent claudica-

tion, which may be unilateral or bilateral, commonly involves the thigh, hip or back muscles.

The diagnosis of chronic occlusive arterial disease can be established in most cases by finding impaired or absent peripheral pulsations. It is sometimes desirable to have the patient in a warm room for examination, but nitroglycerin may be given sublingually if arterial pulsations are reduced or cannot be felt because of spasm. Postural tests and careful inspection of the skin are helpful in determining the degree of ischemia in the extremities.<sup>1</sup>

Measurements of skin temperature by instruments, use of the plethysmograph, use of radioactive isotopes for blood volume studies and mechanical devices are not necessary for the routine diagnosis and treatment of benign occlusive peripheral arterial disease. Nevertheless, these methods may be very valuable in research, appraisal of therapeutic procedures, estimation of degrees of associated arterial spasm or determination of exact location of arterial lesions when surgical treatment is contemplated.

Roentgenologic examination of the extremities may show patchy zones of atheromatous calcifications in the large and medium sized arteries which are to be distinguished from finer, more diffuse calcifications in the medial coat (Monckeberg's sclerosis) of the artery. The smooth calcification seen in the medial layer, or Monckeberg's sclerosis, is usually seen in the medium sized vessels. The lumen itself is not especially reduced; therefore, serious clinical consequences do not ordinarily occur.

Arteriography is valuable in the evaluation of patients, and properly performed can demonstrate refilling of the arteries be-



low a segmental occlusion which is important if vascular surgery is considered. In occlusion of the lower abdominal aorta or iliacs, translumbar aortography is helpful to delineate the extent of the occlusive process and the presence of collateral circulation. Learmonth<sup>2</sup> has listed the purposes of outlining the peripheral arterial tree as follows: (1) to demonstrate whether the arrangement of the arteries is normal or abnormal; (2) focal irregularities in caliber of the arteries; (3) atheromatous or thrombotic blockage of the main arteries and extent of the collateral circulation; and (4) site of aneurysms or arteriovenous fistulas. Others have described the various methods used for satisfactory roentgen pictures by the injection of dye into the peripheral arteries.<sup>1</sup> Recently a technic has been described for taking serial angiograms of the entire lower half of the body. Such improvements in radiologic diagnosis have obviously been spurred by the recent developments in vascular surgery.

Atherosclerosis and Buerger's disease, according to Allen, Barker and Hines,<sup>1</sup> can usually be differentiated on a clinical basis if certain criteria noted in Table 1<sup>1</sup> are kept in mind. However, one cannot distinguish them with certainty without histologic examination of the diseased blood vessels. Most of the cases of chronic occlusive disease of the peripheral arteries seen in clinical practice result from arteriosclerosis obliterans. The patients with atherosclerosis are usually older, with symptoms referable to the lower extremities, and commonly there is associated hypertension and hyperlipemia.

### Management of Acute Arterial Occlusions

In acute arterial occlusions symptoms may occur abruptly if large arteries are involved but may be delayed a few hours or days if small arteries are blocked. Numbness, coldness, and parasthesias are the usual complaints; however, pain or weakness may be the initial symptom. If the limb survives following an acute occlusion, the symptoms will eventually become those of chronic occlusive arterial disease.

Peripheral arterial embolism usually originates from intracardiac thrombosis secondary to chronic atrial fibrillation, recent acute myocardial infarction, or thrombosis from an aneurysm in the proximal parts of the arterial tree.

Acute arterial occlusion of the femoral or axillary arteries by embolism or thrombosis is a serious medical emergency. Delayed, inadequate, or wrong treatment for this condition often results in extensive gangrene. The treatment of acute arterial occlusion is outlined in table 2. It is important to remember that acute occlusion of an artery is almost always followed immediately by a severe arterial spasm not only below the site of occlusion but also many of the collateral anastomosing arteries may be involved. If the spasm is allowed to persist the endothelium distal to the occlusion may be damaged to the extent of provoking secondary arterial thrombosis.

Intra-arterial tolazoline HCl. (Priscoline) or papaverine HCl. may be helpful to alleviate the arterial spasm if given early and repeated as indicated. Attention is called to the specific point that the extremity should not be elevated as this may increase

Table 1

| <i>Distinguishing Features</i>                      | <i>Buerger's Disease</i>         | <i>Arteriosclerosis Obliterans</i>                  |
|---|----------------------------------|---|
| Age of onset  | Almost always less than 50 years | Almost always more than 40 years                    |
| Sex   | 99% males                        | 83% males   |
| Involvement of upper extremity                      | 40% cases                        | Rare  |
| Presence of history of superficial thrombophlebitis | 40% cases                        | Never   |
| Roentgenographic calcification of arteries          | Absent                           | Present in 70% of males                             |
| Hypertension  | Rare in Early Years of Disease   | Present in 35% of cases                             |
| Diabetes mellitus                                   | Rare in Early years of disease   | Present in 20% of cases                             |
| Plasma lipoids                                      | Usually normal                   | Frequently elevated especially in younger patients. |

From Allen, Barker, Hines, *Peripheral Vascular Diseases*, W. B. Saunders Co., 1955.

Table 2

## TREATMENT OF ACUTE ARTERIAL OCCLUSION

- I. Early diagnosis and treatment.
- II. Relieve pain with opiates as needed.
- III. Avoid trauma, application of heat, or elevation of extremity.
- IV. Relieve arterial spasm.
  - A. Heat—warm environment. temp. about 90° F.
  - B. Hot pad to back or warm packs to uninvolved extremities.
  - C. Alcohol by mouth 45 cc. every 4 hours.
  - D. Intravenous papaverine or intra-arterial priscoline.
  - E. Oscillating bed if available.
  - F. Anesthetize appropriate sympathetic nerves.
    1. Spinal or caudal anesthesia.
    2. Paravertebral Anesthetization of sympathetic Ganglia.
- V. Administer Anticoagulants.
  - A. Intravenous Heparin.
  - B. Dicumarol or coumadin.
- VI. ? Intravenous fibrinolytic.
- VII. ? Trypsin, Chymotrypsin, or varidase. (Intramuscular, buccal, oral).
- VIII. Embolectomy, provided medical treatment is not effective within a few hours and appears to be chance of saving limb.

the degree of ischemia. Inasmuch as the extremity is cold there is a tendency to apply some sort of heat locally to the skin. The use of heat in any form is absolutely contraindicated and the extremity should be carefully protected from local trauma. The head of the bed should be elevated 12 to 15 inches if the Sanders oscillating bed is not available. The room temperature is best maintained at 80 to 90° F. Heparin is given intravenously immediately in acute arterial occlusions and may prevent secondary thrombosis in the distal arteries. There is clinical evidence favoring the continued use of heparin in adequate therapeutic doses for two or more weeks after any thrombo-embolic episode. When the embolus is lodged in a major vessel with marked peripheral ischemia which persists after prompt and adequate medical treatment, a carefully planned and executed surgical embolectomy is desirable to increase the limb salvage rate. If operation is performed, one must not forget that intensive longterm preventive measures must be instituted to prevent the late deaths of the postembolic period. Longterm anticoagulants may be extremely helpful in these cases, or in patients with repeated episodes of thrombo-embolism. In the care of acute peripheral embolic arterial occlusion one is not only treating the arterial circulation of

the affected extremity but must cope with the underlying disease which caused the embolus and make every effort to prevent subsequent embolic episodes. That is, in most cases, one must be concerned with the patient's underlying cardiovascular disease and institute appropriate medical treatment which usually demands continued reappraisal of the individual case for the best therapeutic regimen.

In recent years there have been reports that fibrinolytic preparations intravenously may dissolve a fresh thrombus.<sup>3</sup> However, there is very little objective evidence to indicate that actual lysis of the clot occurs with the preparations now available, although there may be some overall beneficial effect in some cases of thrombo-embolic disease. Indeed, more experience is needed for an accurate evaluation of the status of fibrinolytic in arterial occlusions in the extremities. Febrile or toxic reactions may occur following the use of fibrinolytic agents; however, the newer preparations seem to produce fewer undesirable side effects. At any rate, a double blind study over a period of years will probably be necessary to substantiate the initial favorable results of fibrinolytic agents. Most of the reports definitely favor the simultaneous administration of anticoagulants with fibrinolytic in the management of acute thrombosis. The proteolytic enzymes advocated in the treatment of many inflammatory conditions are of questionable value in acute arterial occlusion.

Simple arterial thrombosis is rare but may occur in polycythemia vera, or be associated with hematologic infections, neoplastic or collagen disease, secondary to arterial trauma, or thrombosis that is an idiopathic entity (essential thrombophilia).

## Chronic Occlusive Arterial Disease

For the majority of patients with chronic benign occlusive disease of the peripheral arteries, the treatment continues to be primarily a medical problem despite the many helpful and often dramatic surgical procedures which have been developed in recent years. The ideal objectives in the treatment of peripheral occlusive disease are listed in table 3. Until we know more about



Table 3

PRINCIPLES OF TREATMENT OF PERIPHERAL  
OCCLUSIVE ARTERIAL DISEASE

- I. Arrest disease progress by prevention of extension or recurrence of arterial occlusion.
- II. Dilate uninvolved arteries and arterioles to improve arterial circulation in ischemic limbs.
- III. Instruction in prophylaxis against injury to ischemic disease.
- IV. Treat ulceration and gangrene.
- V. Relieve pain.
- VI. Increase circulation mechanically.
- VII. Arterial grafts or other corrective surgery.

the complex problem of atherogenesis and the many external influences and internal derangements which play a role in its etiology, we can at best try to favorably influence those factors which appear to be, on the basis of our present knowledge, beneficial in the prevention or recurrence of the occlusive process.

Other active attempts at treatment to improve collateral circulation in the involved extremity and to prevent or heal ischemic ulceration and gangrene are in order. In atherosclerotic patients, the tissues of the extremities have less capacity to heal, ischemic neuropathy is often troublesome, and the prognosis as to life and often operation is poorer because of the frequent association of coronary or cerebral arterial disease, or other visceral arterial lesions. Also, there is a greater tendency to progressive thrombosis in affected arteries. These factors may influence the methods of management and also the duration of conservative treatment in cases with gangrene.

One may conclude that the large number of procedures which have been advocated for treatment of peripheral vascular disease in recent years suggest that there is no real satisfactory method of treatment. Between the episodes of arterial obstruction the collateral circulation tends to increase gradually and compensate to some degree with or without specific treatment. A particular method of treatment or medication may get undeserved credit if it is used at the right time. Experimental studies with animals demonstrated that atheromatous plaques regress when fed less cholesterogenic diets, and there is some indication that the arterial lesions of humans may be at least in part reversible.<sup>4</sup>

## The Atherosclerosis Dilemma

Some of the procedures advocated to ar-

rest the progress of atherosclerosis and/or thrombosis are listed in table 4. (A and B)

Table 4A

PREVENT OR ARREST THE PROGRESS OF THE DISEASE  
(ATHEROSCLEROSIS AND/OR THROMBOSIS)

- I. Stop use of tobacco.
- II. Control or correction of lipid metabolism (hyperlipemia).
  - A. Dietary fat (20 to 30% total calories from fat, preferably fat high in unsaturated fatty acids).
  - B. High doses nicotinic acid.
  - C. Triparanol (mer 29).
  - D. Hormones—thyroid, triiodothyronine, estrogens.
  - E. Heparin.
  - F. Doubtful value
    1. Beta-sitosterols (plant sterol mixture).
    2. Vitamins.
    3. Lipotropic factors—choline, inositol, methionine, etc.
    4. Dispersing or surface active agents.
- III. Control of obesity and systemic diseases—hypertension, diabetes mellitus, polycythemia, hypothyroidism, etc.
- IV. Regular moderate physical exercise.
- V. Reduce or avoid emotional and physical stress and strain.
- VI. Other possible etiologic factors—heredity, sex, vascular trauma, liver function, infection, culture, etc.
- VII. Anticoagulants—heparin, dicumerol, coumadin.

Table 4B

FOODS SUGGESTED IN DIETS LOW IN SATURATED AND  
HIGH IN UNSATURATED FAT\*

Lean meats—beef, poultry, lamb, fish  
 Skim milk, dry cottage cheese, egg whites  
 Any vegetables without fat, and any fruits (except avocado)  
 Sweets—all except made with cream, chocolate, cocoa or fat  
 Few egg yolks and nuts  
 Corn or cottonseed oil  
 Miscellaneous—catsup, chilisauce, herbs, pepper, spices, vinegar, salt  
 Margarine (largely unhydrogenated)

\*Fat 30% calories      70-80% of fat unsaturated

It is generally accepted that smoking cigarettes or excess use of tobacco in any form is harmful to most all cases of occlusive arterial disease and abstinence is helpful in the management of these patients.<sup>1,5</sup> Nicotine produces constriction of small arteries and arterioles thus capable of decreasing flow of blood into the extremities. The vasoconstrictive effect of tobacco tends to compromise the collateral circulation unless, of course, the individual has had a sympathectomy.

Most physicians who are concerned with this problem have long accepted that sustained elevation of the serum cholesterol is associated with early atherosclerosis.<sup>6,7</sup> Therefore, it follows that hypercholesterolemia is undesirable and one should prob-

ably make an effort to reduce serum lipids. The major unsolved question is how—diet, weight reduction, regular exercise, or drugs?

In patients with elevated blood lipids a high percentage will get a drop in the serum cholesterol if placed on a low fat diet (limited fat intake to 30 Gm. daily); however, the chance of arresting atherosclerosis by correction of lipid metabolism, as indicated by hypercholesterolemia, is still to be proven. At any rate, low fat diets have gained considerable popularity in recent years. Surveys in various sections of the world have been made by Keys<sup>7,8</sup> and others, and the studies seem to show a relationship between the percentage of total calories derived from dietary fat, plasma cholesterol levels, and the incidence of atherosclerotic heart disease. There are many variables in these population groups, such as culture and environmental factors, which must be considered. Thus there is uncertainty prevailing in the literature regarding the exact role of fat and other dietary factors in the production of atherosclerosis, nevertheless, pending more long-term comprehensive information, it appears desirable to restrict fats and more particularly, the hydrogenated fats, which are mainly those of animal origin, in individuals with high serum lipids. Corn oil which contains large amounts of polysaturated fatty acids and margarines rich in linoleic acid are usually favored, and special recipes appear to be popular and helpful adjuncts to low fat diets.

There is increasing interest in the relationship of dietary fat and blood coagulation and it has been suggested that the formation of a thrombus of fibrin on the intima may initiate or play an important role in progression of atherosclerosis. Some observations indicate that there is an unfavorable effect of hyperlipemia on the clotting mechanism. A recent report proposed that saturated fats tend to retard fibrinolysis.<sup>4</sup> More research and better means of investigation will be necessary to shed further light on this complex problem of coagulation and athrogenesis.

Other metabolic disturbances, perhaps involving proteins rather than fat, may be important in the etiology of atherosclerosis.

One hypothesis is that there is a production of beta proteins which have an abnormal affinity in carrying capacity for fatty substances such as lipids and cholesterol. The effects of this affinity are presumed to cause an increase in viscosity and coagulability of the blood, leading to thrombosis via a decrease in hepanoid substances, subendothelial deposition of fibrin, decreased fibrinolysis, deposition of cholesterol and other lipids in the fibrin deposits causing atheroma and thrombosis. Thus we have another interesting and not so simple hypothesis which has not been proven.

In 1896, Osler<sup>9</sup> emphasized that "worry and strain of modern life" is one of the important causes of arteriosclerosis and at the same time he included heredity, rich diet, alcohol and tobacco as probable etiologic factors. There has been considerable interest in the role of emotional stress and strain in the cause of atherosclerosis and/or thrombosis.<sup>9</sup> Stress has been reported to raise the plasma lipid level and thus predispose to the infiltration of the intima and shortening of the coagulation time promotes the formation of clots in diseased blood vessels. There is very little evidence that stress itself can cause any specific disease, but it is generally accepted that excessive or unusual emotional stress and strain is capable of accelerating the progress of most any disorder. There is evidence indicating that regular moderate exercise may protect against getting atherosclerosis. One writer<sup>9</sup> has recently suggested that most people would be better off to be concerned with more exercise and less struggle with one's past frustrations.

Since reducing the blood lipids has become popular, many medications alleged to lower the cholesterol have been detailed to physicians. Unfortunately many of these drugs are not effective and they are usually expensive and a lot of trouble to take. Plant sterol mixtures<sup>10</sup> that contain 75 to 80% beta sitosterol and gamma sitosterol supposedly prevent intestinal absorption and resorption of cholesterol (perhaps by competing for enzyme mechanisms) and reported by some investigators to lower the serum cholesterol. High serum cholesterol levels can be reduced by large doses of nicotinic acid (3 to 6 Gm. per day) in most all



cases.<sup>11</sup> The mechanism of its action is not known. Although serious toxic effects have not been encountered, the side reactions are unpleasant and most patients will not continue the drug. Thyroid substance has been given to reduce the serum cholesterol with varying success. More recent reports on the use of triiodothyronines are of interest but should be considered experimental. The so-called lipotropic factors and dispersing or surface active agents have been disappointing. Estrogen compounds have been shown to lower cholesterol but prolonged and continued administration in large doses of estrogens in an attempt to correct hyperlipemia is impractical in men who account for a high per cent of cases with atherosclerosis. It has been known for several years that intravenous heparin brings about clearing of alimentary lipemia<sup>12</sup> and additional studies have shown that heparin causes some alterations in the circulating lipoproteins. Thus it is presumed that heparin has a desirable influence on lipid metabolism. Heparin and its effect on the clearing factor deserves further investigation and may help to solve part of the riddle of atherosclerosis and/or thrombosis. Unfortunately, the present cost of heparin is prohibitive for longterm treatment in the majority of patients.

Tripaanol (Mer 29), an inhibitor of cholesterol biosynthesis, will in most cases reduce the serum cholesterol and radioisotopic tracer studies indicate that there is a decrease in true sterol and cholesterol content of the body as a result of the decreased formation of the cholesterol in the body.<sup>13</sup> The block to biosynthesis is just before the conversion of desmosterol to cholesterol. Desmosterol is a little known steroid which has so far been identified simply as one of a series of compounds formed on the way from acetate to cholesterol. It will take considerable time to determine whether or not desmosterol is a toxic substance or may have atherogenic qualities, or if other steroids may accumulate with therapeutic doses of Tripaanol which would have undesirable side effects. Tripaanol has been given to many people and so far there are very few reports of toxicity.\* Achor and associates<sup>14</sup> reported 7 patients who developed cutaneous side effects while taking tripaanol.

Ichthyosis, alopecia and loss of hair color were described in 2 men, and 5 women had significant loss of scalp hair. These side effects are rare but should be looked for, especially if patients are given more than 250 mg. daily.

But will tripaanol slow or prevent the occurrence of atherosclerosis? There are many unsolved problems; however, it appears that tripaanol is an important drug, and it may well open the way to a better understanding of steroid metabolism as well as the mechanisms of atherogenesis. As emphasized before, everyone seems to be aware that cholesterol is not necessarily the primary agent involved in atherogenesis. The ideal level of cholesterol for optimal health and prevention of atherosclerosis has not been clearly established. Many other factors such as heredity, sex, physical activity, hypertension, obesity, hormones, emotional stress and strain, age, vascular trauma, liver function, and culture probably play a role in determining the specific individual's tendency to develop clinical manifestations of atherosclerosis. (Fig. 1.)

#### Methods Used for Peripheral Vasodilation

The procedures used for vasodilation in peripheral vascular disease are listed in table 5. An environmental temperature of

Table 5

#### PROCEDURES USED FOR VASODILATION

- I. Warm environmental temperature, general and local.
- II. Ethyl alcohol by mouth.
- III. Vasodilating drugs.
- IV. Foreign protein and typhoid vaccine or pyrogen.
- V. Anesthetization of sympathetic nerves or ganglia.
  - A. Procaine
  - B. Alcohol
- VI. Regional sympathetic ganglionectomy.

80° to 85° F. produces some reflex arteriolar dilatation but may be uncomfortable for some patients. Heat cradles and boxes with a 25 watt bulb may be placed over the foot of the patient's bed. The bulb must be protected so that the patient cannot come in

\*On April 17, 1962, The Wm. S. Merrell Co. sent a circular letter to doctors of the county that it had withdrawn the drug from the market, and with the Federal Food & Drug Administration had asked all hospital and retail pharmacies to return its stock of the drug. They requested that its use be discontinued in patients.

contact with it in any way and ideally the temperature should be controlled thermostatically, and not allowed to exceed 90° F. which will maintain the skin of the feet and legs at normal temperature. Cold packs or refrigeration are not recommended in the treatment of chronic occlusive vascular disease except in selected cases where the limb is beyond salvage and there is increased risk of operation, or if there is serious infection or toxemia from gangrene.

Various drugs have been used in the attempt to produce arteriolar dilatation in the extremities. Most medications advocated in the treatment of peripheral vascular disease will produce dilatation in normal subjects; however, their effectiveness is limited in patients with chronic occlusive arterial disease. Some of the drugs, the doses

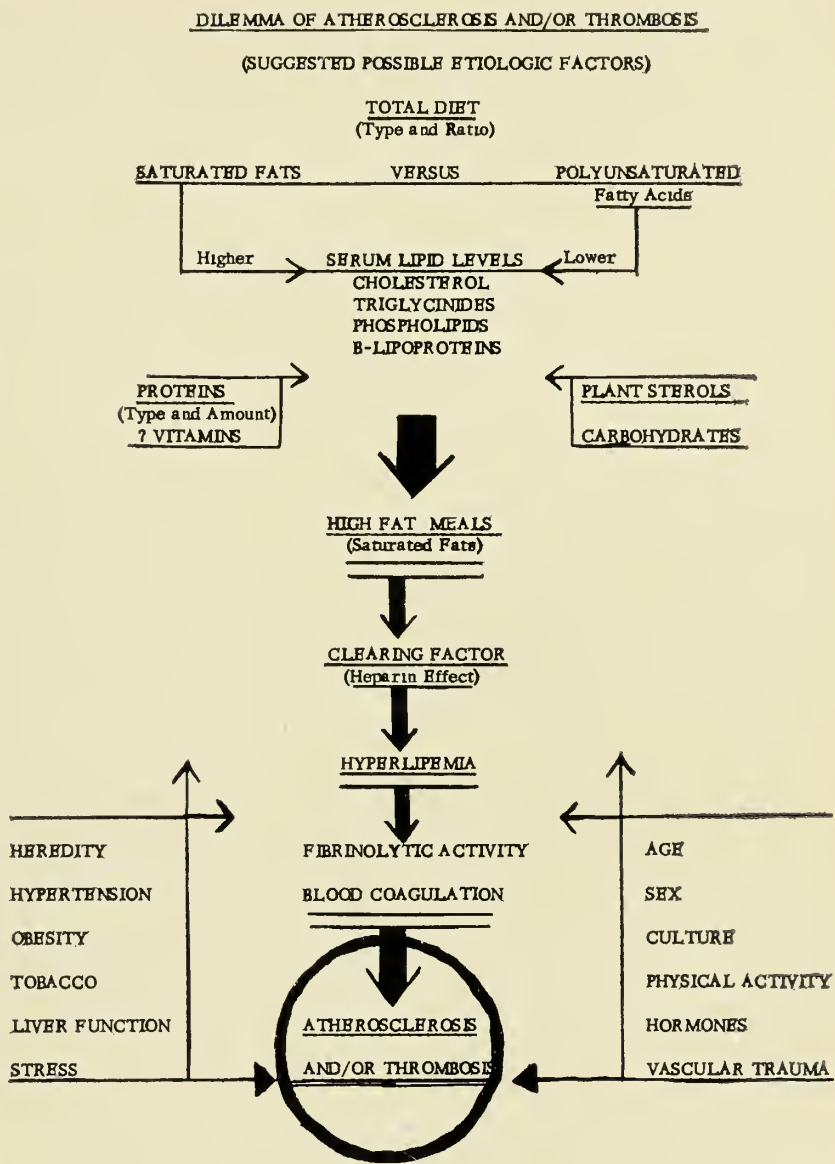


FIG. 1.

Table 6  
DRUGS USED IN TREATMENT OF PERIPHERAL VASCULAR DISEASE

|  | Single<br>Dose<br>(mg.) | Doses<br>Per<br>Day | Side Effects   |
|--|-------------------------|---------------------|--|
| I. Tolazoline HCl. (Priscoline)                        | 25-50                   | 3-4                 | Gastrointestinal irritation, "goose-flesh, chilliness, orthostatic hypotension, formication, tachycardia.        |
| II. Phenoxybenzamine HCl. (Dibenzyline)                | 10-30                   | 3-4                 | Tachycardia, orthostatic hypotension, nasal stuffiness, gastrointestinal irritation.                             |
| III. Azapetine (Ilidar)                                | 25-100                  | 3-4                 | Fever, gastrointestinal irritation orthostatic hypotension, weakness.  |
| IV. Mecamylamine HCl. (Inversine)                      | 2.5-5.0                 | 2-3                 | Orthostatic hypotension, dry mouth, blurred vision, constipation.  |
| V. Nyldrin HCl. (Arlidin)                              | 6-24                    | 3-4                 | Excessive nervousness; avoid use in recent myocardial infarction, hyperthyroidism, tachycardia, angina pectoris. |
| VI. Trimethylcyclohexanol<br>Cyandelate (Cyclospasmol) | 50-100                  | 4                   | Occasional flushing, tingling, nausea, headache, or gastric irritation.  |
| VII. Isoxsuprine HCl. (Vasodilan)                      | 10-20                   | 3-4                 | Rare by oral route. Palpitation, dizziness, hypotension, tachycardia,—I.V.                                       |



commonly used, and potential side effects are listed in table 6. Adrenolytic agents, such as dibenzylamine, have been recommended as a vasodilator in the treatment of peripheral vascular disease. Nylidrin HCl. (Arlidin) presumably increases the force of the cardiac contraction and thus is claimed to accelerate muscle circulation. It therefore has been promoted for the treatment of intermittent claudication syndrome but this opinion is not concurred with by many investigators. Isoxsuprine HCl. (Vasodilin) is one of the recent additions to the many drugs recommended for use in peripheral vascular disease. The initial reports have been encouraging and few side effects reported, but further controlled studies are needed before one can evaluate its effectiveness. Ethyl alcohol (if not otherwise contraindicated) is still a favorite in many centers and will dilate the arterioles in some patients with ischemic extremities.

#### Clinical Observations with Cyclandelate

In 1958 we were given the opportunity to try a new drug (the mandelic acid ester of 3, 5, 5 trimethylcyclohexanol or then referred to as WY 1480) which is now marketed as Cyclospasmol (cyclandelate). Based on some experimental work cyclandelate was classified as a spasmolytic agent with a similar action to papaverine but considered twice as effective.<sup>15</sup> Also, the drug was reported to have a peripheral vasodilatory activity as well as being capable of reducing arterial spasm. A number of Dutch authors reported on the clinical use of cyclandelate in various types of peripheral vascular disease. The results appeared to be encouraging and the drug seemed to cause minimal side effects in the dosage used.

It was decided to give cyclandelate a clinical trial in some patients with typical symptoms of the intermittent claudication syndrome due to arteriosclerosis obliterans. Two of these patients had occlusions of the lower abdominal aorta (Leriche's syndrome) with claudication in the hip. Four patients had occlusive disease of the femoral arteries with typical intermittent claudication syndrome of the calf. These patients were asked to establish a baseline

for the average amount of physical activity required to produce claudication by walking daily for a period of one week before beginning the drug treatment. In most cases a member of the family accompanied the patient to clock the time required to bring on intermittent claudication while walking over the same route each day. After approximately one week of daily walking exercise the patient appeared to establish a fairly consistent pattern which was assumed as the baseline. Cyclandelate, 100 mg. four times daily, was given each patient. During the following four weeks of observation all the cases had improved significantly. Four patients doubled their baseline walking distance before experiencing intermittent claudication. There were no undesirable side effects and many of the patients volunteered that the extremities were warmer and there was improvement in well being. These clinical observations were encouraging, though we were still not convinced. It is well known that in the past many of the new drugs used in the treatment of peripheral vascular disease were initially reported with enthusiasm to be beneficial; therefore, we suggested a double blind study for further evaluation of the effectiveness of cyclandelate.

After approximately one year of observation in the 16 selected cases for study there appeared to be as much improvement of the intermittent claudication syndrome in the patients during the time when they were taking the placebo as there were in those who were taking the cyclandelate. It was our impression that the regular walking exercise to tolerance probably accounted for the apparent improvement in the intermittent claudication. In several cases the tolerance to walking regressed to near the baseline after discontinuing the regular walking exercises. In patients with arterial insufficiency excessive walking might be harmful because of the increased circulation diverted to the muscles, thus producing a relatively ischemia of the skin; therefore, regular inspection of the feet and the usual detailed instructions on the care of the feet are mandatory.

Our observations should not be interpreted to mean that cyclandelate is not an effective vasodilator in the treatment of

peripheral vascular disease; however, it appears that cyclandelate did not in itself significantly improve the symptoms of intermittent claudication. As previously stated, many of the patients said they felt better, had less pain and discomfort in the toes and the extremities were warmer after taking cyclandelate. Several patients with gangrenous ulcers who were treated with the drug were improved or healed, thus suggesting a beneficial effect from this vasodilator. However, there are many other variables involved in the treatment of ischemic ulcers and without a large control series it is impossible to evaluate the degree of effectiveness of cyclandelate or other peripheral vasodilators. Nevertheless, it is our impression that cyclandelate when given in adequate doses (200 mg. 4 times daily) may be a helpful adjunct in the management of peripheral vascular disease and there are few side effects associated with the use of this drug.

#### Mechanical Methods of Treatment

Mechanical devices have been devised to improve the circulation to the extremities but their effectiveness is questionable. Three types of apparatus have been used to increase the circulation by mechanical means, namely, the Pavex alternating suction and pressure machine, the intermittent venous compression apparatus, and the oscillating bed. The beneficial effect of devices that effect a milking type of pressure in a distal direction has not been established. At best, they are only adjuncts to other methods of treatment. The Sanders oscillating bed, which is merely a modification of old postural exercises carried out without effort by the patient, seems to be helpful in some cases of severe ischemia and it is still being used in hospitals where it is available. It seems to give symptomatic relief in some patients.

Intramuscular injections of tissue extracts, particularly deproteinized pancreatic tissue extract (Depropanex) have been used for intermittent claudication with equivocal results. Injections of B<sub>12</sub> have been recommended in treatment of ischemic neuritis, especially if there is associated diabetes mellitus with neuropathy with questionable benefit. Benadryl, quinine, or

quinidine and aspirin may be helpful in the relief of muscle cramps which often occur at night.

#### Sympathectomy

Sympathectomy is often helpful in the treatment of chronic occlusive disease of the peripheral arteries and its best theoretical benefit is improvement of the circulation to the skin, thus tending to guard against gangrene and ulceration.<sup>1,16</sup> Sympathectomy rarely improves intermittent claudication and likewise very few if any medications will significantly relieve intermittent claudication syndrome. Therefore, as a rule, it is unwise to promise the patient relief of claudication in the calf or thigh from sympathectomy. As a rule the immediate beneficial effects of sympathectomy are a warm extremity, less pain in the digits and, if there is ulceration, healing is enhanced. Also, there is less chance of developing future ulceration and gangrene.

#### Surgical Treatment of Occlusive Arterial Disease

Thrombo-endarterectomy and arterial grafts or shunts may be indicated in selected patients to preserve life of limb.<sup>7,18</sup> However, one should be cautious in recommending surgical treatment for all cases of benign arterial insufficiency. In some cases, especially in aneurysms<sup>19</sup> or occlusions of larger arteries, the prognosis for patients can be significantly improved by excision of the lesion and replacement of an appropriate graft. In general, if the atherosclerotic occlusive process is localized, especially in larger arteries, and there is evidence of adequate distal run-off on the arteriogram, the present reports indicate that the best results can be expected in bypass shunts of microcrimped Dacron or Teflon or in thrombo-endarterectomy. DeBaakey<sup>16</sup> reports that a high percentage of the cases seen by his group are suitable for surgery and the majority get immediate improvement or restoration of the circulation. However, from the reports now available, it is difficult to assess the percentage of late failures in those individuals who are considered an immediate surgical success.

#### Treatment of Ulceration

The best treatment for ulceration is prevention. It is unfortunate that more than



half of the ulcerations and gangrene seen in chronic occlusive peripheral disease are initiated by minor avoidable injury,—burns from hot water bottles and electric pads, or other well intentioned but misguided therapy. The patient must be very vigilant to avoid crushing or bruising of ischemic hands or feet, scratches, cuts, fissures in the skin, blisters, and frostbite. These patients should wear comfortable shoes that do not bind or rub and new shoes should be broken in gradually. Fungal infection may be the starting point for ulceration and gangrene in ischemic extremities; therefore, an appropriate fungocidal agent should be used for prophylaxis and active treatment. Every patient with ischemic extremities should be carefully instructed in the proper care and protection of the feet. The dictum of William Osler "The feet should receive more attention than the face" is most applicable to patients with peripheral vascular disease. (Table 7.)

Table 7

## TREATMENT OF ULCERATION AND GANGRENE

- I. Prophylaxis: avoidance of mechanical, thermal and chemical injury.
- II. Fungus control.
- III. Warm soaks—bland solutions.
- IV. Wet dressings—bland solutions (saline, Dakin's, boric acid, or weak  $\text{KMNO}_4$ ).
- V. Tyrothricin, bacitracin, or polymyxan locally.
- VI. Proteolytic agents—varidase, tryptar, parenzyme.
- VII. Powdered blood cells.
- VIII. Nitroglycerin ointment.
- IX. Debridement of gangrenous tissues.
- X. Amputation of digit or limb.

Application of strong antiseptics, corn cures, keratolytic agents, irritating ointments, and solutions is strongly contraindicated in individuals with peripheral vascular insufficiency. Indeed, to remove or excise an ingrown toenail, corn or callus from an ischemic foot may well invite disaster.

The patient who has gangrene or ulceration is best treated in a hospital. In most cases, the extremity should be kept at a level with the hip, that is, neither elevated nor dependent. In gangrenous ulcerations there is usually infection and appropriate antibiotics should be administered as indicated by the organism cultured and the sensitivity studies. Wet dressings of tyrothricin solution (0.05%) may be used on in-

fectured ulcers. Warm soaks with boric acid solution or very weak (1:9000) potassium permanganate are often helpful. As a rule, conservatism is usually the wisest course in ischemic ulcers. Ointments are usually of little value and may impede healing, and there is a risk of developing sensitivity reactions from the use of local antibiotics. Warm (but never hot) wet dressings may facilitate drainage and hasten sloughing. Proteolytic agents, such as Varidase (streptokinase and streptodornase) or trypsin (Tryptar) or cymotrypsin have been employed to clean up dirty ulcers. When ulcers are clean and indolent, powdered blood cells or scarlet red ointment (5%) may expedite healing. Gangrenous tissue may be debrided carefully and gently, but only after a clear line of demarcation occurs, and has begun to separate spontaneously. In recent years more amputations of partially gangrenous toes have been carried out successfully. The surgeon usually waits until signs of infection have disappeared from the site chosen for the incision and the wound is closed loosely. Antibiotic therapy before and after amputation has been of considerable help in combating infection and promoting healing.

When gangrene extends into the foot, conservative treatment as a rule is of little value and amputation of the leg will be necessary. The transmetatarsal amputation rarely leaves a useful foot. The usual site for amputation in arteriosclerosis obliterans is through the lower third of the thigh since many of these individuals are older and have other clinical manifestations of atherosclerosis. The selection of cases for below the knee amputations depends on the adequacy of the circulation. Younger patients with arteriosclerosis obliterans or thromboangiitis obliterans (Buerger's disease) may be considered for calf amputation. An incision for amputation through the midcalf is made without a tourniquet and if free bleeding from muscles is encountered, the surgeon may choose to complete the amputation at this site. If there is little bleeding and the muscle is pale, then a thigh amputation should be done where healing will almost always occur even though the occlusive process extends into the common iliac artery.

### Case Reports

Many of the patients who primarily seek medical attention with symptoms of occlusive disease of the peripheral arteries have or will develop within a few years manifestations of coronary artery disease or cerebral vascular disease. In the following case intermittent claudication was first noted 12 years ago. Despite severe vascular disease which has developed during the last ten years, the patient is still active which suggests that the prognosis as to loss of an extremity or succumbing to other vascular complications is not always poor. There are individual patient variations, but it is our conviction that the outlook for these patients with vascular disease may be greatly improved with conscientious medical supervision. Good cooperation by the patient is important if the physician is to succeed, and we must recognize that in many instances nature has a tremendous capacity to compensate in the face of disease.

*Case 1.* This 65 year old white man was first examined in 1953. He gave a history of having hypertension since 1941, he had been a heavy cigarette smoker for 30 years and had a chronic cough which had been diagnosed as asthmatic bronchitis and/or smoker's bronchitis.

The first symptoms indicating occlusive peripheral arterial disease were noted in 1949 when he began to have intermittent claudication of the left calf. He had noted that walking about 2 blocks at a moderate pace produced a cramping or aching distress of the left calf. In 1951, the patient had an acute episode of dizziness, blurred vision, slurred speech, and weakness of the right upper and lower extremities. At that time he was diagnosed as having cerebral thrombosis. He gradually improved with symptomatic treatment and had a minimal residual from the stroke.

In Oct., 1953 the patient was admitted to the hospital with severe substernal chest pain with radiation to the neck and left upper extremity. On admission the B. P. was 160/90. The patient appeared anxious and apprehensive, and complained of severe chest pain. He had slight hesitancy of speech and occasional slurring of his words. He was given morphine and atropine and nasal oxygen. Heparin, 50 mg. was given intravenously. One hour later the patient was comfortable. He was placed on a coronary regimen. Further physical examination was made after he was stabilized. The fundiscopic examination revealed grade II sclerosis of the retinal arterioles, but no hemorrhages, exudates or papilledema noted. The pupils were equal and reacted to light and accommodation. Nystagmus was not

demonstrated. There was slight motor weakness of the right side and the deep tendon reflexes were hyperactive. On chest examination auscultation revealed inspiratory and expiratory wheezes over both lung fields. The heart was enlarged to the left with the left border being percussed 14 cm. to the left of the midsternal line in the 6th interspace. The rate was regular with occasional premature contractions. There was grade I systolic murmur heard over the precordium but loudest at the apex. Examination of the extremities revealed the pulses of the left posterior tibial and dorsalis pedis arteries to be absent, and there were signs of moderately severe ischemia of the left foot and leg. The foot and lower third of the leg were cool. There was moderate dependent rubor and elevation pallor of the left foot. There was mild atrophy of the subcutaneous tissues. The remaining peripheral arterial pulses were present and normal. The patient was treated for acute coronary occlusion with myocardial infarction.

The EKG. confirmed the diagnosis of coronary occlusion; serial tracings revealed the changes of acute anterior myocardial infarction. The complete blood counts, urinalysis, and serology were negative or within normal limits. The cholesterol was 200 mg. and the BUN. 15 mg. 100 ml.

Following the acute myocardial infarction the blood pressure gradually increased and the patient was first started on reserpine and hydralazine Hcl (Apresoline). Otherwise, the hospital course was uneventful. He gradually improved and was discharged from the hospital. He was advised to follow a low fat, relatively low sodium diet, and he was given reserpine and hydralazine to control the hypertension. He returned to the office for observation and determination of prothrombin times as needed to control the anticoagulants. After 2 months dicumarol was gradually withdrawn. The patient's occupation was an automobile mechanic and he was allowed to return to work but advised to avoid extreme effort and over-fatigue. He had angina pectoris with mild to moderate degree of effort which was relieved promptly by taking sublingual nitroglycerin.

In June, 1955 the intermittent claudication syndrome of the left calf gradually became worse and he complained of increasing pain and coldness of the left foot. The postural tests revealed severe ischemia of the left foot with delayed venous filling and marked elevation pallor. The foot was cold and there was slight sensory deficit over the dorsal aspect of the foot and toes. The ischemic, dull, aching pain of the left foot increased, and the patient began to complain of severe sharp, shooting pains of the left leg and foot which awakened him from sleep; this pain was thought to represent ischemic neuropathy. Later the patient developed contact ischemic ulcers between the second and third toes; therefore, he was admitted to the hospital for treatment. Whiskey, 45 cc., was given four times



daily. Anticoagulants were started since the patient has had a previous myocardial infarction and cerebral thrombosis and was developing evidence of progression of the occlusive disease of the peripheral arteries. The nocturnal pains continued to be troublesome. A left femoral arteriogram (figure 2) revealed occlusion of the femoral

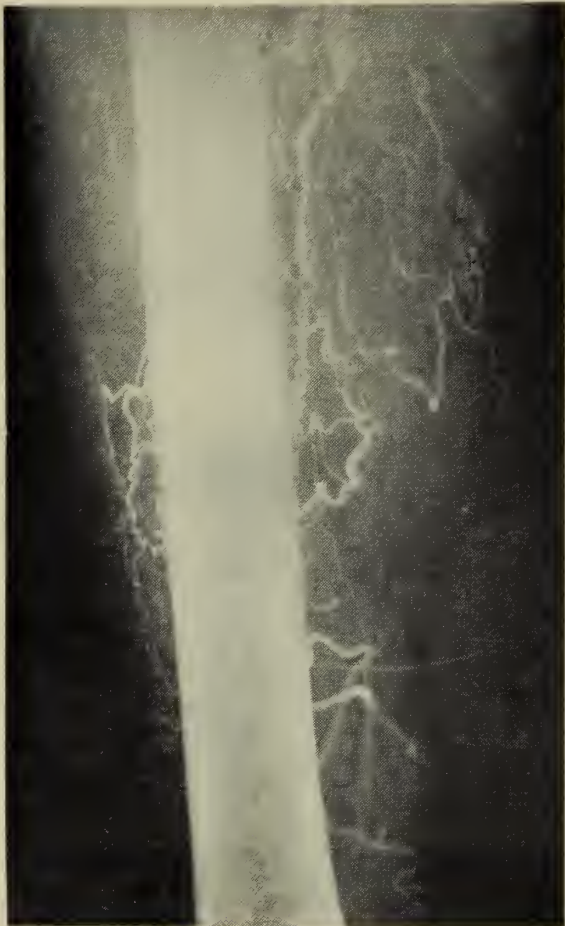


FIG. 2.

FIG. 2. Arteriogram in 1956 showing occlusion of the left femoral artery and collateral circulation. (Case 1.)

artery at about midthigh level but with evidence of fairly good developing collateral circulation. Vascular surgery was discussed but the patient did not wish to consider operation. Tolazoline HCl (Priscoline) was injected directly into the left femoral artery each day while in the hospital. In addition to alcohol he was tried on various oral vasodilators with questionable benefit. General medical treatment for occlusive disease of the peripheral arteries was continued. The collateral circulation gradually improved and eventually the ischemic ulcers of the toes healed. As in all our cases with ischemic extremities, the patient was again instructed in detail regarding the proper care and protection of the feet, etc. Long-term anticoagulant therapy was thought to be advisable and continued on an outpatient basis.

In May 1956, the patient was admitted to the

hospital with an episode of severe chest pain which had not been relieved by taking sublingual nitroglycerin. He had findings of acute coronary insufficiency without myocardial infarction, gradually improved and returned to his regular work.

He managed to get along fairly well until June, 1957, when he was admitted to the hospital because of blurred vision, vertigo and weakness of the right side. The B.P. was 140/90. He had nystagmus to lateral gaze and moderate weakness of the right side. The spinal fluid was negative. He was given heparin intravenously every 4 hours for 3 days. Peripheral vasodilators were given along with other symptomatic treatment with gradual improvement. Again patient returned to regular work. In Oct., 1957, the patient developed hematuria associated with hypoprothrombinemia. He was given vitamin K<sub>1</sub> which controlled the bleeding and shortly thereafter dicumarol therapy was resumed. During this time he was continued on a low fat, low sodium diet, reserpine-hydralazine for the hypertension and other symptomatic medications. He continued to have intermittent claudication of the left calf and angina pectoris syndrome. In Jan., 1958 he was admitted to the hospital with an episode of acute coronary insufficiency, and for the first time developed signs of congestive heart failure and he was started on digitalis. He was given diuretics and anticoagulants were continued. Chlorothiazide, 0.5 Gm. daily, was added to his treatment; the reserpine-hydralazine dose was reduced. The chest roentgenogram revealed cardiac enlargement with changes in both lung fields compatible with early pulmonary emphysema.

In 1958, the patient was presented at our annual heart symposium as a good example of a man who has had multiple episodes of occlusive vascular disease. (This case was discussed by Dr. William Dock, professor of medicine, Long Island College of Medicine.)

During the past 4 years the patient has had episodes of coronary insufficiency and respiratory infections which have required a few days of hospitalization. He continues to have severe intermittent claudication of the left calf; however, the ischemic pain of the left foot is much less troublesome and he does not suffer from the ischemic neuropathy. Being a very cooperative patient he follows a rigid low fat diet and the serum cholesterol levels have been less than 200 mg. per 100 ml. During the last year the patient has had two severe episodes of acute cholecystitis which responded to general medical measures; however, it appears that operation may be needed. During the episodes of cholecystitis he has had moderate azotemia but the BUN. has now returned to normal. The patient has been on continuous anticoagulant therapy for 6 years and the prothrombin time is well regulated. The intermittent claudications syndrome appears to be improved by progressive walking exercises to tolerance which stimulate collateral circulation. The value of various peripheral vasodilators in

this case is questionable; however, he did appear to improve while taking cyclandelate.

Two cases with atherosclerotic and thrombotic occlusion of the lower abdominal aorta, or so-called Leriche's syndrome, have received conservative treatment for 10 years and 6 years respectively without serious complications involving the lower extremities. In one case (No. 2) a bilateral transabdominal lumbar sympathectomy was performed 9 years ago and apparently relieved some of the coldness and discomfort of the lower extremities; however, there was no apparent change in the intermittent claudication syndrome. The best theoretical benefit from sympathectomy is improvement of skin circulation, thus tending to guard against gangrene and ulceration. Many drugs have been advocated in the treatment of peripheral vascular disease and most of these medications will produce dilatation in normal subjects; however, their effectiveness is limited in patients with chronic occlusive disease of the peripheral arteries. These cases were included in our observation by a double blind method of the effectiveness of cyclandelate in intermittent claudication syndrome, and there was very little, if any, objective improvement which could be ascribed to the medication. Both patients appeared to get subjective improvement with cyclandelate when given in doses of 200 mg. four times daily.

The intermittent claudication was improved, at least temporarily, by progressive, regular walking exercises to tolerance of the claudication discomfort. However, it is emphasized that the feet must receive close attention, including regular inspection by the physician. Theoretically, excessive walking could be harmful because of the increased circulation diverted to the muscles, thus producing a relative ischemia of the skin.

**Case 2.** This 51 year old white woman was first seen by us in 1955, giving a history of having first developed intermittent claudication involving the hips in 1951 while traveling in Europe. Later she began to have coldness of the feet and aching pains of the lower extremities. In 1952, she was examined at the Ochsner Clinic in New Orleans and diagnosed as having occlusion of the distal aorta. In Oct., 1952, a bilateral transabdominal lumbar sympathectomy was performed by the Ochsner Clinic. The coldness and discomfort of the lower extremities were improved after sym-

pathectomy, though there was very little change in the intermittent claudication syndrome.

In July, 1953, the patient developed a sudden onset of left hemiparesis and hemianesthesia and impairment of speech. She was treated at the Halifax Hospital in Daytona Beach and diagnosed as having thrombosis of the right middle cerebral artery. Apparently a stellate block was performed shortly after the onset of these symptoms with questionable beneficial effects. She was given anticoagulants, other supportive treatment and physical therapy and gradually improved, though she had moderate residual weakness and hyperalgesia on the left side. She complained frequently of aching pains of the left upper and lower extremities and she continued to have slight hesitancy and slurring of speech.

In July, 1954, the patient had a complete medical examination, which included special peripheral vascular evaluation, at St. Luke's Hospital in Chicago. Special studies on the lower extremities indicated moderately severe impairment of arterial circulation. Later studies revealed some improvement in the arterial circulation, thus suggesting that she was having considerable vascular spasm.

My initial *physical examination* revealed a well developed, very tense, white woman with slight slurring of the speech. She favored the left side and walked with a awkward gait. It appeared that the weakness of the left side was being exaggerated. The B.P. was 120/70 in both arms. Fundoscopic examination revealed grade I sclerosis of the retinal arterioles. The heart and lungs were negative. The femoral and the distal arterial pulses in both lower extremities were absent but the feet were warm suggesting good effect from the sympathectomy. There was evidence of moderate ischemia of the legs and feet as indicated by the postural tests. The legs and feet were thin which suggested mild atrophy of the subcutaneous tissues. Neurologic examination revealed mild decrease in motor power on the left side. The deep tendon reflexes on the left were slightly increased; the Babinski sign on the left was equivocal. The hyperalgesia on the left side was difficult to evaluate because of the subjective nature. She had slight left facial weakness.

The complete blood count and urinalysis were within normal limits. Serum cholesterol was 310 mg., the fasting blood sugar 110 mg. and the BUN. was 9 mg. per 100 ml. The chest roentgenogram revealed the heart size and configuration to be normal and there was no evidence of lung disease. Roentgenograms of the lumbar spine and abdomen revealed marked calcification in the region of the abdominal aorta. Roentgenograms of the thighs did not reveal atheromatous vascular calcifications.

In 1959 the patient began to have episodes of dizziness, blurred vision, weakness and staggering, interpreted to be intermittent cerebral ischemia associated with cerebral vascular insufficiency. The patient has always been highly nervous and



tense and she does not always cooperate for the best medical management. Since there was a history that the patient had a tendency toward alcoholism and drug addiction, it was decided best not to attempt longterm dicumarol or coumadin therapy. Expense of medications was not a problem for this patient, therefore, we elected to place her on longterm subcutaneous heparin therapy.

Despite many little problems the patient was able to go on a 2 months cruise around South America during 1959. As a matter of fact, everything went so well on the trip in 1959 she went on another 2 months cruise to the Scandinavian countries in 1960. For each cruise the patient's case history was made available for the ship's doctor or any other physicians required to see her during the trip. Also, the patient is fortunate enough to be able to afford private nurses.

In April 1961, the patient first developed epigastric distress which was compatible with peptic ulcer syndrome. These symptoms became worse and she developed nausea and vomiting. Roentgenograms of the upper gastrointestinal tract revealed partial pyloric obstruction with dilatation of the stomach. It was necessary to pass a tube for Wangenstein suction for several days. Subsequent x-ray studies revealed a small gastric ulcer and a channel ulcer. The patient has been placed on an ulcer regimen and she has gradually improved.

The intermittent claudication symptoms involving the thigh and hips come on after walking one block at an average pace but do not handicap her since she is relatively inactive. We have encouraged her to walk to tolerance of intermittent claudication which probably helps to stimulate collateral circulation to the muscles.

On a recent physical examination no arterial pulses were palpable in the lower extremities. There is a 6 x 4 mm. ulcer over the left lateral malleolus. The patient stated that one month ago she bumped the ankle and sustained a skin abrasion which did not heal. At this time the ulcer appears to be improving with treatment.

*Comment.* Thus this is the case of a 51 year old white woman with occlusion of the lower abdominal aorta who has been treated with conservative measures for 10 years without serious complications to the lower extremities from the arterial insufficiency. It will take several years to evaluate the long-term benefit of arterial graft procedures as opposed to good medical management in occlusive peripheral arterial disease.

*Case 3.* This 41 year old Negress was first seen in July, 1955 complaining of easy fatigability, weakness of the lower extremities, and coldness of the feet. On further questioning in recent months she had noted fatigue and aching sensation in both thighs and buttocks after walking

two or three blocks. This distress was relieved promptly by resting without change in position of the extremities.

*Past history.* A fibroid uterus was removed 16 years previously. Eleven years before admission the patient had an acute episode of back pain attributed to kidney stones. However, she did not have an x-ray examination, collect a stone, or other evidence to definitely prove this diagnosis. The patient was not aware of having high blood pressure. She had been obese for several years.

The *physical examination* a short, moderately obese, colored woman who did not appear in acute distress. The initial B.P. was 170/100. The fundoscopic examination revealed grade I sclerosis of the retinal arterioles without signs of hemorrhages, exudates or papilledema. The examination in general was within normal limits. There were no abnormal neurologic findings. The legs were small and there was a suggestion of mild subcutaneous atrophy around the ankles and feet. The femoral, popliteal and pedal arterial pulses were absent. The feet and lower third of the legs were cool. Elevation of the feet produced moderate pallor and the venous filling time was slightly delayed to 30 to 40 seconds.

*Laboratory findings.* The RBC. count was 4.29 million, Hgb. 12.6 Gm. WBC. count of 6,400. Urinalysis showed a few WBC. on microscopically. Serologic test for syphilis was negative. The serum cholesterol was 284 mg., fasting blood sugar 110 mg. and N.P.N. 36 mg. per 100 ml. The chest roentgenogram revealed the heart size to be within normal limits and there was no evidence of lung disease. Roentgenograms of the lumbar spine revealed moderate osteoarthritis and atheromatous calcification in the abdominal aorta; those of the thighs showed patchy zones of atheromatous calcification in the region of both femoral arteries. The EKG. was within normal limits.

The patient was given detailed instructions regarding the care and protection of the feet and advised to wear properly fitted shoes; she was advised to walk to tolerance of the intermittent claudication distress. She was placed on 1000 calorie reduction diet and advised to limit the use of salt. Chlorothiazide, 0.25 Gm., was given daily with good control of the mild hypertension. The patient continued to complain of aching distress of the lower extremities and the intermittent claudication symptoms limited her activity. She was given nylidrin Hcl for a few weeks with questionable benefit. Pancreatic extract was administered intramuscularly and its effectiveness was difficult to evaluate; however, the patient gradually improved and she was able to carry on with her regular occupation as a beautician.

In Mar., 1958 the patient began to have increasing coldness, fatigue and weakness of the lower extremities. At that time an experimental peripheral vasodilator, WY 1480 cyclandelate was received for clinical trial and the patient was given 100 mg. four times daily. She reported

subjective improvement while taking the drug for 3 months, stating that the legs and feet were warmer, and she had less discomfort of the lower extremities. The patient was not reducing her weight as instructed and the cholesterol levels ranged around 260 to 300 mg. per 100 ml. She complained of cold intolerance. The PBI. was 3.2 mcg. %. Dessicated thyroid, was given daily and the dose was gradually increased to 2 gr. daily. The patient continued to improve; she worked regularly.

In Nov., 1958 the patient was asked to establish a new baseline on the amount of walking exercise required to bring on intermittent claudication syndrome without taking peripheral vasodilators. She was advised to choose a smooth level area for daily walking, to count the number of steps per minute and the minutes or seconds required to produce the thigh and hip claudication. After getting an average time over a period of one week the patient was given cyclandelate 100 mg. four times daily. During the following 2 months the patient had tripled her baseline time. The cyclandelate was discontinued for 2 months and she did not take the regular walking exercise to tolerance. It is interesting to note that after not taking the regular walking exercises the baseline regressed almost to the original level. Then a pill which appeared to be the same as the cyclandelate was given to the patient and at that time, under the double blind study neither the

physician nor patient knew whether it was the drug or placebo. After establishing a new baseline the patient was again able to gradually increase her walking distance before developing intermittent claudication. Later when the pill was identified, it was learned the patient had been taking the placebo. Thus there appeared to be very little difference between the improvement in walking while taking cyclandelate and the placebo.

During the past 2 years the patient has not been taking any peripheral vasodilators and appears to be adjusting fairly well. The weight and blood pressure are controlled. She still complains of coldness of the feet and develops aching of the hips and buttocks after walking two to three blocks at a moderately fast pace. On a recent examination a weak arterial pulsation was palpable in the right inguinal area and probably represents a collateral artery, otherwise the arterial pulsations were absent in the lower extremities. There was evidence of moderate ischemia of the feet; however, the patient has not developed ischemic ulcerations or signs of gangrene. The potential of bilateral lumbar sympathectomy has been discussed with the patient; however, she does not wish to have surgery at this time. This patient has not manifested evidence of coronary artery disease or cerebral vascular insufficiency.

(To be continued)



## CLINICAL NOTES FROM THE TENNESSEE HEART ASSOCIATION DISSECTING ANEURYSM OF THE AORTA

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With changes in definitive management, the diagnosis of dissecting aneurysm of the aorta has acquired new significance. It is no longer only an academically interesting though rather hopeless phenomenon. With the growth of experimental and clinical vascular surgery, there is progress toward increasing the natural survival rate of only 10 per cent.<sup>1</sup> However, the frequency of antemortem diagnosis seems to be between 25 and 50%,<sup>2</sup> and obviously an increase in the survival rate rests on the frequency of early accurate diagnosis for definitive treatment.

Historically, only 6 cases were diagnosed antemortem before Shennan's<sup>3</sup> analysis of 300 cases in 1934, but since then the entity has been recognized with increasing frequency. The autopsy incidence appears to be approximately one per 309,<sup>2</sup> but is higher in autopsy series in which sudden unexpected death occurs. The age range is variable having been reported from 14 months up to 100 years of age.<sup>3,4</sup> There is a sex predilection for males in a 2:1 ratio, but apparently there is no racial factor.

The pathologic study of an aortic dissection grossly reveals hemorrhage within the aortic media with separation of the layers of the aortic wall. Usually there is an associated intimal tear, most frequently just distal to the aortic valve, but not uncommonly at the great vessels of the arch. Spontaneous re-entry into the original aortic lumen may occur with a second intimal tear, giving rise to the "double-barrelled" aorta. It has been believed that this occurs in many of the patients who survive the natural course of the process.

Associated clinical conditions which should alert suspicion include the Marfan's syndrome,<sup>5</sup> pregnancy, and hypertension. The appearance of the Marfan's syndrome is striking when present in all its features.

Typically, these patients are tall, "loose jointed," with a dolichocephalic head, high arched palate, and subluxated lenses. However, formes frustes appear, and even a "reverse Marfan's" known as the Weill-Marchesani syndrome has been described and is characterized by short stature, brachydactyly, and ectopia lentis.<sup>6</sup>

The role of pregnancy is unclear but apparently the process is more frequent in the antepartum or postpartum period. Hypertension, coarctation of the aorta, aortic stenosis, and other conditions have been incriminated causally.

The clinical manifestations usually are a function of the site of the aortic tear and the extent of the dissection. We prefer to classify the process according to presenting manifestations and included are six groups: cardiac, peripheral arterial, pulmonary, abdominal, renal, and neurologic. The involvement of several systems may be the first diagnostic lead.

Pain is the most frequent presenting complaint, usually is in the chest and is described as crushing, tearing, or bursting. With progression of the tear down the aorta, the pain may "march." The differential diagnosis usually includes acute myocardial infarction, although typically the pain of aortic dissection reaches its peak immediately whereas the pain of myocardial infarction may progress more gradually. Aortic murmurs occur frequently, (especially that of aortic insufficiency) and is thought to be a result of the distortion of the aortic valve ring from the hematoma and/or intimal tear. The importance of the presence of aortic murmurs, particularly if known to be of recent origin, must be stressed in the differential between aortic dissection and myocardial infarction.

Peripheral arterial occlusion frequently results from the engorged dissecting hematoma. Partial occlusion may be overlooked unless the blood pressure is compared in the opposite extremity. Aortic dissection must always be considered in a patient presenting with acute peripheral vascular symptoms.

Extracardiac manifestations in the chest include dyspnea, cough, hemoptysis, pleural pain, and pleural effusion or hemothorax. Most commonly the effusion or hemothorax

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is on the left, and the mistaken diagnosis of pneumonia, malignant disease, or pulmonary infarction is not rare.

The abdominal pain seen with the process is usually in the upper abdomen or flank, suggesting acute pancreatitis, acute cholecystitis, or perforated peptic ulcer. There is often, however, difficulty in localizing the exact point of pain within the upper abdomen. The flank pain is similar to upper ureteral colic, and hematuria is not uncommon. Renal involvement may occur secondary to obstruction of the aorta proximal to the renal arteries or from dissection of the renal arteries themselves.

The neurologic findings are possibly the most bizarre.<sup>7</sup> The typical "stroke" with carotid artery occlusion may actually have dissection extending into the carotid arteries with subsequent occlusion, flaccid hemiplegia, hemianesthesia, or coma. Ischemic necrosis of the spinal cord produces flaccid areflexic paraplegia, hypesthesia, and bladder atony with sphincter paralysis. Peripheral nerve changes are perhaps more common with symptoms of numbness, coldness, tingling, and with objective sensory loss and areflexia.

Laboratory aids include leukocytosis, often hematuria, and not infrequently elevation of the serum glutamic oxaloacetic transaminase when the dissection involves the coronary ostia with subsequent myocardial infarction. Nonspecific electrocardiographic findings are the rule, but the presence of an injury pattern does not exclude the diagnosis. The roentgenographic appearance of a dissecting aneurysm depends upon the location of the dissecting process. Widening of the supracardiac shadow, straightening of the aortic curvature, and medial displacement of intimal calcifications are helpful signs. Angiocardiography is helpful.

The surgical treatment consists of either excision and graft replacement when the

lesion is distal to the great vessels, or by the "re-entry procedure" when the arch is involved.<sup>8</sup> The former procedure seems to be gaining most favor. The preoperative management may be lifesaving. This includes the relief of pain with opiates, oxygen and absolute bed rest. Careful regulation of the blood pressure may help prevent rupture of the aneurysm.

The clinical diagnosis of dissecting aneurysm of the aorta depends on awareness of the entity, keen clinical suspicion, and an understanding of the varied manifestations. The pattern of a catastrophic episode—whether cardiovascular, neurologic, or abdominal—calls for consideration of aortic dissection, and the coexistence of chest pain, aortic murmurs, and peripheral artery occlusion is practically diagnostic. It is now a surgical emergency that requires early accurate diagnosis and early surgical treatment if the natural survival rate of ten per cent is to be improved.

#### References

1. Weiss, S., Kinney, I. D. and Maher, M. M.: Dissecting Aneurysm of the Aorta With Experimental Atherosclerosis, *Am. J. M. Sc.* 200:192, 1940.
2. Erb, B. D. and Tullis, I. F.: Dissecting Aneurysm of the Aorta, *Circulation* 22:315, 1960.
3. Shennan, T.: Dissecting Aneurysm. Medical Research Council, Spec. Report Series No. 193. London, His Majesty's Stationery Office, 1934.
4. Frei, C.: Ueber das aneurysma dissecans aortae. Inaug. Dissert., Zurich, J. J. Meier, 1921. (Cited by Sailer, S.: *Arch. Path.* 33:704, 1942.)
5. Neilson, G. H. and Sullivan, J. J.: Dissecting Aneurysm of the Aorta Associated With Marfan's Syndrome, *M. J. Australia* 43:925, 1956.
6. Bowers, D.: Marfan's Syndrome and the Weill-Marchesani Syndrome in the S. Family, *Ann. Int. Med.* 51:1049, 1959.
7. Weisman, A. D. and Adams, R. D.: The Neurological Complications of Dissecting Aortic Aneurysm, *Brain* 67:69, 1944.
8. DeBakey, M. E., Cooley, D. A. and Creech, O. J., Jr.: Surgical Treatment of Dissecting Aneurysm, *J.A.M.A.* 162:1654, 1956.



## STAFF CONFERENCE

### Vanderbilt University Hospital\*

#### Chromophobe Adenoma

DR. ROBERT RICHIE: The case today is that of a 55 year old white woman admitted to the neurosurgical service because of failing vision.

Her history revealed some disorder of visual acuity for at least 10 years which had been aided by corrective lenses. Two weeks before admission she had consulted an ophthalmologist because of increasing visual difficulty and his examination revealed the presence of a bitemporal hemianopsia. She was promptly referred here for neurosurgical evaluation. A review of her past history indicated a tardy menarche (age 18), menstrual irregularities until age 31 at which time her menses ceased. For the past several years she has noted excessive dryness of her skin and some thinning of her hair. Recently, she has noted occasional frontal headaches.

Physical examination revealed an alert, well developed, well nourished white woman, slightly obese, with smooth skin, and fine thin hair. There was bilateral loss of visual acuity, most pronounced on the right. Visual fields showed bitemporal constriction principally in the inferior quadrants. Fundusoscopic examination showed slight pallor of the discs, but no other abnormalities. The remainder of the physical examination was considered normal. EKG., chest x-ray, urinalysis and hemogram were normal. The fasting blood sugar was 92 mg., cholesterol 395 mg., serum calcium 9.2 mg. and serum inorganic phosphorus 4.3 mg. per 100 ml. Skull x-rays revealed a marked erosion and excavation of the sella. Carotid arteriograms indicated an elevation of the carotid siphon and the proximal portion of the anterior cerebral artery.

Twenty-four hour urine determinations showed a creatinine of 850 mg., 17-hydroxycorticoids of 5.1 mg. and 17-ketosteroids of 2.8 mg. Following the use of compound SU-4885 the 24 hour excretion of 17-hydroxycorticoids was 8.1 mg. and 17-ketosteroids was 4.5 mg. These studies were interpreted as indicating a diminished pituitary reserve.

A diagnosis of chromophobe adenoma of the pituitary was made and an operation was performed on April 11, 1962.

DR. WILLIAM MEACHAM: I think it is obvious to us all that the history and physical findings on this patient are rather classical for a long-standing state of hypopituitarism, in spite of which she has remained

a very active and alert individual. As Dr. Richie has pointed out, only the very recent and progressive visual difficulty prompted her to seek help. The referring ophthalmologist, Dr. Philip Lyle, must be commended on his detection of a very early bitemporal field loss which was apparent only with the small 3 mm. test object. By the crude method of confrontation, this visual defect could not be perceived with any degree of accuracy. However, with the presence of a bitemporal field loss, the neurologic problem becomes quite simple in terms of localization since this can be produced only by a lesion of the central chiasm. The lateral projection of the skull x-ray taken specifically for the sella turcica shows very significant enlargement and deepening of the sella with erosion of the clinoid processes, a very characteristic picture of a sizable intrasellar mass which is now becoming extrasellar and causing compression of the optic chiasm. The diagnosis of a chromophobe adenoma of the pituitary seemed almost a certainty, but since we have, in the past, had some rather alarming experiences with intrasellar aneurysms simulating a pituitary neoplasm, we currently carry out carotid angiograms prior to surgery. As you have heard, the angiographic survey did not suggest the presence of an aneurysm.

We have been fortunate in having our colleagues in endocrinology share our interest in pituitary tumor syndromes, and we routinely depend upon them for help and advice in the management of such patients before, during, and after surgery. Dr. Herschel Estep of the Endocrinology Division is here and I shall ask him to comment about his studies on this patient.

DR. HERSCHEL ESTEP: We have been interested in this patient, also, and we are always grateful for an opportunity to follow such a patient throughout the operative period.

We do not have a definite routine of endocrinological evaluation for patients who will undergo operative procedures on the pituitary, but we would like to have a protein bound iodine (PBI) and radioiodine uptake, urinary gonadotropin levels, and basal urinary 17-hydroxycorticoid (17-OHCS) excretion. These tell us whether

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there is a gross dysfunction of pituitary secretions. Unless the dysfunction is clear cut, however, we are left with indefinite data concerning the preoperative status as well as the effects of the surgery on the pituitary secretions in the postoperative period. In the case at hand, urinary gonadotropins were low, being less than 10 mouse units per 24 hours (normal 10-60 m.u. per 24 hours for premenopausal women), but urinary 17-OHCS were equivocally low and no definite conclusions could be made concerning thyroid function, though the clinical picture for hypofunction was good.

Somewhat more specific tests are useful in evaluating the pituitary-adrenal system, and these tests are of interest since they are more direct measurements of pituitary functional capacity. The first of these involves the "physiological" response to stress. Normally, plasma 17-OHCS rise about 20 to 30 mg.% during a major surgical procedure. The plasma 17-OHCS of this patient rose from a preoperative level of 17 mg.% to 31 mg.% during operation. This is a good response and evidence that at least one modality of pituitary-adrenal function was intact.

A second test involves the use of an inhibitor of adrenal steroid synthesis and is a measure of pituitary reserve under non-stressful conditions. When Metapirone (SU 4885) is given to an individual with an intact pituitary-adrenal system, 11 B-hydroxylation of cortisol is partially blocked, and the principal adrenal secretory product is diverted from cortisol to 11-desoxy-cortisol or Compound S. The latter compound is chemically similar to cortisol and is measured by the same routine techniques, but it is metabolically inert. The block in cortisol synthesis results in a fall in peripheral cortisol concentration while 11-desoxy-cortisol (compound S) secretion continues to increase. The fall in cortisol, working through feedback regulation of the pituitary, results in a compensatory increase in ACTH secretion in an attempt to raise cortisol concentration to its former level. The overall effect of this rather complicated interrelationship can be measured by the increase in urinary excretion of 17-OHCS, which, normally, are increased three or four times the excretion on control days.

With all this explanation, it would be good to be able to say something very profound and definite. Unfortunately, the patient received only one-half the usual dose of Metapirone, and the response was equivocal, urinary 17-OHCS going from a control value of 5.1 mg. per 24 hours to 8.1 mg. per 24 hours during the test. Properly performed, however, the Metapirone test of pituitary reserve is a sensitive index of the functional integrity of the pituitary-adrenal system.

DR. MEACHAM: I might recount to you at this point just what was disclosed at operation. Through a right frontal approach the optic chiasm was exposed and immediately a domed, bluish mass could be seen extending forward between the two optic nerves. Normally, this space contains only arachnoid and cerebrospinal fluid, but here the space was completely filled with this tense encapsulated mass. The right optic nerve was somewhat flattened by the underlying mass and it seemed slightly paler than normal. An aspirating needle was introduced into the mass and about 2 cc. of clear, yellow fluid removed, thus collapsing the mass considerably. The operator was then able to grasp the collapsed capsule and by gently teasing it away from some attenuated adhesions beneath the chiasm, the entire mass was delivered from the sella quite intact. The portion of the mass which had occupied the base of the sella was very nodular and obviously contained solid tumor. The sella then appeared as a large yawning cavity with the chiasm now resting rather slackly. The optic nerves seemed more plethoric and were definitely rounder in appearance. There was no detectable surgical trauma to either optic nerve.

She is now 5 days postoperative and, as you can see, she is very alert, oriented and interested. Her vision is subjectively improved and she has not developed postoperative hyperpyrexia, somnolence, diabetes insipidus, or any of the disorders that might suggest damage to the hypothalamus.

The microscopic sections of the tumor reveal sheets and strands of epithelial-like cells clustered about small vessels, and surrounding areas of dense connective tissue stroma. (Fig. 1.) This is a typical chromophobe adenoma. Undoubtedly there is a



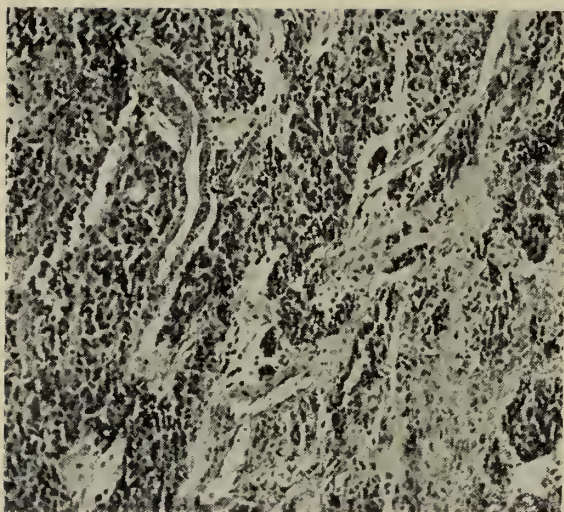


FIG. 1. Photomicrograph showing typical histologic picture of pituitary adenoma.

small, compressed remnant of her normal pituitary gland in the depths of the sella which is functioning to some degree.

It is obvious that we have, thus far, come out well in the management of this particular case, but many times there may be considerable disagreement on how best to manage such a problem. In the event that vision is not seriously jeopardized by rapid acute visual loss, many would elect to rely on radiation to the sella area prior to any surgical consideration. Others would elect to decompress the optic nerves surgically and follow this by a full course of radiation therapy. Dr. Scheibert, you have heard about the plan of action in this case. Would you comment about your convictions in the management of such a problem? Specifically, would you have recommended surgery only, radiation only, or combinations of both, and if the latter, in what sequence?

DR. DAVID SCHEIBERT: The use of cobalt irradiation in the treatment of patients with pituitary tumors has been described in detail in numerous cases, particularly from the Lahey Clinic. It has been utilized even in patients with visual field changes with the occasional need of surgical decompression during the course of cobalt irradiation due to sudden deterioration of vision. It has always been my custom to operate upon a patient with visual field changes in the presence of an expanding intrasellar lesion. Carotid arteriography to rule out the presence of an intracranial aneurysm is indicated before craniotomy. The surgical

approach in the presence of visual field changes has been favored for the following reasons. (1) Cystic lesions, such as in the patient under discussion, might well not respond to irradiation. (2) Immediate surgical decompression of compressed optic nerves is thought to be superior to and safer than the use of irradiation alone which carries with it the danger of edema and additional loss of visual field acuity before irradiation is effective in reducing the size of the lesion.

On the other hand in my limited experience irradiation alone has occasionally been given to patients who have an expanding intrasellar lesion shown on x-ray with symptoms of hypopituitarism and no visual field changes. Thus far no ill effects have been witnessed. One must still keep in mind that irradiation of a cystic lesion probably would be of no benefit.

In answer to your question, I, too, would have operated on the patient as was done, rather than utilize irradiation alone. In view of the apparent complete removal of the patient's cystic intrasellar lesion, it would be preferable not to use cobalt irradiation during the postoperative course but to withhold it for future treatment if additional symptoms and signs should occur. However, in the usual chromophobe adenoma of the pituitary it has been my custom to follow surgical decompression with irradiation therapy.

DR. MEACHAM: I have discussed this very problem with several radiologists and have never received a definitive answer about the effect of irradiation on a cystic lesion of the sellar area. I doubt whether such therapy will effectively reduce the turgor or tension in such a lesion sufficiently to materially relieve the chiasmal compression. Obviously, we can never know in advance whether such a pituitary neoplasm is cystic or solid. On two occasions within the last two years we have had to interrupt radiation therapy for pituitary tumors and proceed with surgery because of rapid and progressive visual loss during the course of therapy. The surgical removal of pituitary tumors does not carry with it risks that would obviate its prompt use as a sight-saving maneuver.

Dr. Cobb, would you give us your views

on the management of this sort of problem?

DR. CULLY COBB: My ideas would be the same about this aspect of this lady's case. It would seem to be a foregone conclusion that with the decrease in visual field and with such a large lesion as shown by the sellar erosion, I would favor surgical exploration in advance of radiation therapy and I think this may still be worth considering for her. But hearing the history in this lady, the thing that interested me is the chronic nature of her illness. Things develop so insidiously in a case like this that characteristics of the disease state come to be identified as just part of the lady's natural makeup. Her delayed menarche at the age of 18, her irregular periods, her failure to conceive and her early menopause were actually manifestations of her disease. Such changes didn't threaten her life, but certainly had a great deal to do with the pattern of her life and I am sure with her characteristics as she and her friends recognized them. Then only after 37 years was this very benign, indolent, slowly growing tumor finally recognized when it came to compress the optic chiasm and lead to her visual loss. You just wonder what changes might have occurred in this lady's life if by some good fortune an x-ray had been made of her sella thirty years or so ago when she first was having her endocrine changes. It suggests that this type of study probably ought to be done in people with definite and persistent endocrine changes of this type. There are so many cases with menstrual irregularities who don't have pituitary disease that I am sure that most gynecologists would throw up their hands at the thought of making a pituitary examination of every one. In patients such as this, however, such studies might have clarified the cause of endocrinopathy.

DR. MEACHAM: Dr. Charles Wells has recently come here from Cornell University and I would like to hear from him about his feelings in the matter of postoperative radiation therapy in a case such as this. How did you manage this problem at Cornell?

DR. CHARLES WELLS: I think they were probably handled there the way they are here, that is, without any definite rules

about what should be done in such a situation. In this woman, I feel that there was little to be gained from radiation in the immediate postoperative period since you were certainly not dealing with anything like an emergency situation at the time that you saw her. This woman had slight if any visual loss to begin with so far as she was actually concerned, and you relieved all of the pressure against the chiasm at the time of surgery. I don't believe I would be in favor of radiation, but perhaps would prefer to save that for some time in the future.

I would like to make one or two comments and then to pose one other question. Last week, as you know, we discussed a patient with a spinal cord tumor who had a history of very long duration. Today we have another central nervous system tumor, again with a history of very long duration. At least part of the symptoms in the past are probably related to the neoplasm, so that we have seen on two successive weeks that a lengthy history does not rule out the presence of a neoplasm within the central nervous system. The second thing to be emphasized is the importance of a detailed visual field examination in any patient who comes in even vaguely complaining of difficulty with vision. As far as I am concerned, this should be a routine part of the examination in any patient seen on the neurology or neurosurgery services. As you have heard, the defect in this patient could be demonstrated only with small objects and not by confrontation. By the time you find a visual abnormality by confrontation, it is usually too late to do anything about improving the visual abnormality surgically or otherwise; so we do need to emphasize how important it is to use small test objects early in the course of illness to pick up possible abnormalities.

My last remark really is a question. I would like to know whether the management in this patient would have been different had this been a woman in her early thirties with only slight visual field changes and with mild menstrual irregularities but hopeful of having children. Do you think there would be any chance of her having recovery of endocrine function after surgery, or is it better to go ahead and let her take her chances without surgery so long



as there is no clear evidence of severe visual loss at the time?

DR. MEACHAM: There is little likelihood of surgical removal of the tumor improving the patient's endocrine function. This clinical problem has to be met by supportive and replacement therapy. I would agree that a young woman without severe, progressive visual loss, but with a chromophobe tumor should have radiation therapy alone.

Perhaps Dr. Estep could enlarge on the question of improvement in normal pituitary function after removal of an intrasellar mass, although I cannot say that I have seen such improvement demonstrated in our experience. Dr. Estep, how shall we manage this patient in terms of correcting her hypopituitary state?

DR. ESTEP: As you have already pointed out, Dr. Meacham, the endocrinologist has not been able to do very much regarding pituitary function evaluation until relatively recent times. Clinical description and a few laboratory tests of target organs were the mainstays of an endocrine work-up. Presently, as I mentioned before, we can measure pituitary functional capacity or reserve before and after the operative procedure. Our experience with surgical patients is not extensive, though, and the data are not sufficient to predict what the results of surgery might be. We have followed several patients who received pituitary irradiation for Cushing's disease, and these people not infrequently had deficient gonadotropin secretion as well as limited pituitary reserve as determined by their response to Metapirone. Whether this is true of folks who have operations on or about the pituitary I cannot say. Studies of this type require rather exhaustive testing before and after the procedure and so far the general experience with this seems somewhat limited.

As for her endocrine management from this point, I would think that we should withdraw all hormone therapy and see what she can do on her own. It is a little early for definite conclusions regarding pituitary function, but a few days after she has been off maintenance steroids, we should be able to determine whether she can respond to Metapirone, and at this time repeating the gonadotropin and thyroid tests would be

helpful. Such examinations periodically would reveal much in the way of pituitary recovery as well as serve for a basis of endocrine replacement therapy.

DR. MEACHAM: This seems to be a very rational and logical plan of management and, to me, seems far superior to a plan of "assumed" need for large daily doses of potent steroids.

Our plans for her do not include post-operative radiation therapy, but we will reserve that for use in the future should the need for it arise.

DR. JOE CAPPS: I think the Cushing series shows they had fewer recurrences with surgery and postoperative irradiation than just with surgery alone. I would also like to re-issue my plea for arteriography to be performed on all people who are going to be subjected to any form of radiation therapy for pituitary lesions because we occasionally find intrasellar aneurysms, meningiomas and other lesions. I would also like to ask Dr. Estep a question. ACTH theoretically is the best drug to use for replacement in these people, but it doesn't seem to work as well as steroids. Can you tell me why?

DR. ESTEP: I was not aware of this problem. However, if one wishes to obtain the pharmacological effects of cortisol, he can give many times what the adrenal can secrete under maximum stimulation. The larger doses of steroids administered may account for some of the observations.

DR. MEACHAM: We are all inclined to be much too liberal with steroid medications, but since Dr. Liddle, Dr. Estep, and other members of the Endocrinology Division have taught us the soundness of supplying the drugs on the basis of physiological demand, we have followed their advice very closely, and with gratitude.

Dr. Capps, as far as I could tell, the solid components of this tumor were removed intact within the capsule. Therefore, I feel that this fortuitous circumstance precludes the necessity of radiation therapy.

DR. COBB: I would like to say one other word about the radiation question. Dr. Estep with his test that he outlined for you, can control this case with precision, but if we didn't have this wonderful and very

modern endocrine management of a case like this, I think that in recent years we would probably have all felt this operation ought to be followed by radiation treatment. Without a refined way of following her endocrine situation, then the only thing you could watch for in the way of future trouble

would be future visual disturbance which would indicate the need for another operation rather than radiation therapy. Were we not able to follow her endocrinologically, then I would be all for going ahead and treating her with radiation now or at some early time.

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**THE REDUCTION OF SERUM CHOLESTEROL BY SODIUM DEXTROTHYROXINE IN EUTHYROID SUBJECTS.** Norman G. Schneeborg, et al, *Ann. Int. Med.* 56.

It has been known for a long time that thyroid hormones can lower the level of serum cholesterol. The dosage required usually causes calorogenic stimulation and an increase in myocardial metabolism. These effects usually are disturbing to persons who are free of cardiac disease and occasionally are dangerous to those who have cardiac disease. Many analogues of thyroxine have been checked in the hope of finding the ideal one that lowers the cholesterol without harmful hormonal effects. The current interest in the possible relationship between high serum cholesterol and atherosclerosis has intensified research in this particular subject. This paper deals with the cholesterol lowering effect of sodium dextrothyroxine in patients who are euthyroid.

Twenty-five subjects were included in this study. Most of these persons had been observed for many months or years prior to the study. They had been on prolonged trials of low fat diets without significant reduction of serum cholesterol. Initially, the dose of sodium dextrothyroxine was 2 mg. per day and gradually was increased up to a maximum of 8 mg. per day. Serum cholesterol was determined at intervals of 1 to 4 weeks and protein bound iodine determinations were recorded every 8 to 10 weeks. Repeated physical examinations were made on these patients in an attempt to find any untoward effect of the drug.

The serum cholesterol was reduced in all 25 patients. The mean control cholesterol was 294 mg. prior to administration of the drug. During treatment the mean cholesterol was 236 mg. indicating a reduction of 58 mg. or 20% of the initial level; 48% of the patients showed a fall in cholesterol of 60 mg.% or greater.

Protein bound iodine was increased in all subjects. The average duration of therapy was 10 months. On the average it required about 3 weeks to lower the serum cholesterol. To check the efficacy of the sodium dextrothyroxine, intermittent placebo therapy was given. In all cases the cho-

lesterol rebounded to control levels in a period of 1 to 10 weeks. Upon reinstitution of the sodium dextrothyroxine the cholesterol again fell.

Certain untoward side effects were noted. Pulse rate and blood pressure were basically unchanged. There was no major change in body weight. There was slight trend toward weight loss noted in several individuals. Rarely palpitation occurred on the high doses, but this was alleviated when the amount of the medication was reduced. Twelve of the patients had previously known coronary insufficiency. Seven reported no change in their anginal episodes after several months of treatment. However, 2 reported aggravation of their coronary insufficiency. Three believed that their attacks of insufficiency were lessened after using the drug. One of the 2 patients who had an increase in coronary insufficiency suffered a myocardial infarction. The relationship of this infarction to the administration of the sodium dextrothyroxine is in doubt, however. One patient developed coronary insufficiency while on the drug. This patient had never had this difficulty prior to taking the medication.

The authors emphasized the need for caution in the use of this agent in patients with known coronary artery disease. Also, noted is the fact that the interpretation of the efficacy of any cholesterol-lowering agent must always make allowance for the spontaneous variability of serum cholesterol values that may be obtained in some patients. In this particular study they attempted to reduce this factor by excluding patients whose control cholesterol value exhibited large fluctuations without dietary or weight change.

Finally, the authors emphasize that although sodium dextrothyroxine is an efficient cholesterol-lowering agent, there is no evidence that it or any other drug alter the course of atherosclerosis or prevent its onset. Prolonged and carefully controlled clinical trials in large numbers of individuals must be carried out before the effect of such drugs on atherosclerosis can be effectively gauged. (Abstracted for the Middle Tennessee Heart Association by Milton Grossman, M.D., Nashville.)



# President's Page



WILLIAM J. SHERIDAN,  
M.D.

Reversing the chronological order of reporting to you seems to be propitious at the moment in view of the recent Senate action in delivering the coup-de-grace to the King-Anderson bill. The inadequacy of this proposed legislation to fit the need of the elderly was immediately apparent to the members of our profession. The defeat of the proposal was directly related to your many and varied herculean efforts; you are commended for convincing the Public that legislation of this type is not in its best interest, nor is it to be desired.

As a sequel it is now incumbent on us to devise means and methods to further implement the Kerr-Mills law in Tennessee. On two occasions it has been somewhat expanded, but still the presently limited application of this generous law serves to give impetus to undesirable and inadequate plans such as the King-Anderson bill. We must now exert influence to further broaden the scope and prove to the Public the merit of the existing law.

As is well known, Dr. Edward R. Annis was chosen as President-elect of the AMA. The Tennessee delegates actively supported him. This was a just and fitting reward for the excellent public service Dr. Annis has rendered during the past year. We look forward to his continued valuable service.

In attendance at the House of Delegates of the AMA one is genuinely impressed with the smoothness and alacrity with which this dedicated body functions. A rather close study was made to determine in what manner their mechanism might be applied to the procedure of our own House of Delegates at the time of our annual meetings. The basic factor appeared to be the emphasis that is placed on confining general discussion and debate of resolutions before the various reference committees. Publicized is the place, and time, of the reference committee hearings and discussion in the general meetings of the House of Delegates is properly confined to the reports of the reference committees.

Many have expressed the desire that changes be effected to shorten deliberations in order to allow members of our House of Delegates to better attend the scientific sessions. In this your President concurs. Steps will be taken to put this plan into effect.

Did you vote in the primary? It is hoped that you did. Now get ready for November!

*William J. Sheridan, M.D.*

President

# THE JOURNAL

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August, 1962

## EDITORIAL

### ANESTHESIA IN THE HYPERTENSIVE

In 1956 there was reported<sup>1</sup> from Washington, D. C. the observation that serious hypotension and bradycardia developed in 16 of 40 patients who were taking Rauwolfia compounds, when they were placed under general anesthesia. In association with these findings it was noted that electrocardiograms demonstrated the occurrence of myocardial ischemia. However, none developed an actual myocardial infarct. These complications were attributed to a vagal response and were handled successfully in all instances by the use of a vasopressor substance and vagal blocking drugs.

Recently Smessaert and Hicks<sup>2</sup> of the St. Vincent's Hospital in New York City have reviewed this problem. They emphasize the importance of avoiding the hazard of anesthesia in patients who have been taking Rauwolfia drugs. An understanding of the pharmacology of the Rauwolfia alkaloids

explains the importance for exercising care in the preoperative investigation of patients who have been taking these drugs.

Rauwolfia acts primarily on the cardiovascular and central nervous systems. The central nervous system manifests relaxation and sedation. The sympathetic-parasympathetic balance is disturbed with a resultant vagotonia. This results in a fall in body temperature, miosis, bradycardia, an increase in lacrimation and intestinal peristalsis. Chemical investigation relates these changes to the lowered content of norepinephrine and serotonin in the central nervous system. The norepinephrine content of the heart muscle is decreased and this is followed by a depressant action on the heart rate and the atrioventricular transmission. A similar action is also seen in the arterial walls where the norepinephrine content is also decreased. Although the vessels are more sensitive in the reflex responsiveness, the net result is an individual unable to respond actively to stress. Since the full action of the Rauwolfia drugs does not begin until four to ten days following the administration of these compounds, and since their action continues for two to three weeks following discontinuance of the drug, special problems are immediately evident. All of these actions are independent of the activity of the adrenal cortex.

The authors<sup>2</sup> report the observations made on 48 patients who had taken Rauwolfia prior to the anesthesia. Three patients were given spinal anesthesia and all of them developed immediate and profound hypotension. The remaining 45 patients were given general anesthesia including thiopental sodium as an induction agent in 34, cyclopropane the sole agent in 8, nitrous oxide in 2, and ethylene in one patient.

The usual response is bradycardia, usually less than 70 beats per minute, hypotension, an increased sensitivity to the anesthetic so that smaller than average amounts were adequate. In 70% of the patients it was necessary to use vasopressor agents. Since the norepinephrine content of the heart and blood vessels is depleted, drugs which act by releasing this naturally occurring chemical are understandably not effective. Examples of this group are ephedrine and the amphetamine compounds. The group of



drugs which act directly on the blood vessels are the compounds to be employed. These include epinephrine, norepinephrine and in particular metaraminol (Aramine) bitartrate in a 1:25,000 solution. The atropine series is useful in combatting the vagotonia. Preliminary drugs such as morphine and meperidine or thiopental sodium should be given in greatly reduced amounts, if at all. The barbiturates in reduced amounts are the preparatory drugs of choice. All of these features of increased reactivity are noted to a greater extent in the chronically ill or depleted patients. Therefore, in summation the patient presents the picture of an individual incapable of responding properly to stress.

The patient who is taking Rauwolfia compounds, accordingly should not have elective surgery until ten to fourteen days after this compound has been discontinued. If the operation is of an emergency nature, the anesthetist being forewarned should exercise great care in the type and amount of the preliminary drugs employed and should use lesser amounts of the general anesthetic. He should be prepared to deal with the predictable shock and should not use spinal anesthesia unless absolutely obliged to do so. This is indeed another instance where prevention and forewarning are virtues to be respected and practiced.

A. W.

#### References

1. Cookley, C. S., Alpert, S. and Boling, J. S.: Circulatory Responses during Anaesthesia of Patients on Rauwolfia Therapy. *J.A.M.A.* 161:1143, 1956.
2. Smessaert, A. A. and Hicks, R. G.: Problems Caused by Rauwolfia Drugs During Anaesthesia and Surgery. *New York J. Med.* 61:2399, 1961.

## DEATHS

**Dr. Jere W. Kirkpatrick**, 79, South Pittsburg, died July 11th in South Pittsburg Municipal Hospital.

**Dr. Arthur J. Von Werssowetz**, 50, Chattanooga, died June 11th. He was assistant director of the Chattanooga-Hamilton County Health Department.

**Dr. James T. Campbell**, Greeneville, died June 8th in St. Petersburg, Florida. He was 68.

**Dr. Watt Yeiser**, Columbia, died June 15th at the Maury County Hospital.

**Dr. James Ernest Hayes**, 58, Memphis, died July 1st at the McLemore Clinic.

## PROGRAMS AND NEWS OF MEDICAL SOCIETIES

### Sumner County Medical Society

The July meeting of the Sumner County Medical Society was held in Memorial Hospital. The scientific program was presented by Dr. Crawford Adams and Dr. Harold Collins of Nashville. They conducted a demonstration of the closed-chest method of cardiac resuscitation, as it is used professionally. The program was presented under the auspices of the Middle Tennessee Heart Association.

### Memphis-Shelby County Medical Society

The Society conducted its regular monthly meeting in the Institute of Pathology Building on July 3rd. The scientific program was presented by the medical service of Kennedy VA Hospital. "Syndrome of Salt & Water Loss Following Relief of Urinary Tract Obstruction" was presented by Dr. Edgar F. Luton; and "Diagnostic Aspects of Catheter Angiography" was presented by Dr. Constantin Cope.

### Chattanooga-Hamilton County Medical Society

The Society conducted its regular monthly meeting on July 3rd in the Interstate Building auditorium. The scientific program was as follows: "Collateral Circulation in the Upper Abdomen with Special Reference to Gallbladder Surgery" by Dr. William G. Stephenson; and "Angiocardiographic Studies in Congenital Heart Disease" by Drs. Fred B. Ballard, Jr. and Thomas S. Long.

## NATIONAL NEWS

### Actions of AMA House of Delegates June 24-28—Chicago

Following is a summary of the important actions of the AMA House of Delegates at its recent meeting in Chicago.

Health care for the aged, medical discipline, composition of the AMA Board of Trustees, a study of the American Board of Abdominal Surgery, relations with the American College of Surgeons and volun-

tary health insurance were among the major subjects acted upon by the House of Delegates at the American Medical Association's 111th annual meeting in Chicago.

Dr. Edward R. Annis of Miami, Florida, was chosen president-elect of the Association. Dr. Annis will become president at the June, 1963, meeting in Atlantic City.

Registration figures at the meeting reached a total of 42,643, including 14,092 physicians.

On Health Care for the Aged, the House received seventeen resolutions expressing full support of the Kerr-Mills program and firm opposition to the King-Anderson type of legislation. States where the Kerr-Mills program is not implemented, it was urged that each state medical association should actively sponsor and promote with other responsible citizens the enactment of such a law. The House took no action on a resolution which called for non-participation in the implementation of the King-Anderson Bill, but urged individual physicians to give particular consideration to three sections of the Principles of Medical Ethics.

The House approved a change in the By-Laws for the purpose of implementing one of the major recommendations made by the Medical Disciplinary Committee at the June, 1961, meeting. "In addition to such disciplinary action as may be taken under the Constitution and Bylaws of the component society and constituent association to which the Member belongs, or when a state medical association to which a Member belongs requests the AMA to take disciplinary action, or when at the request of the American Medical Association, the state Association to which the member belongs consents to disciplinary proceedings by AMA, the Judicial Council, after due notice and hearing, may censure him, or may suspend or expel any member of the American Medical Association from AMA membership only for an infraction of the Constitution of these bylaws or for a violation of the Principles of Medical Ethics."

The House approved a committee recommendation for an increase in the size of the Board of Trustees from 11 to 15 members. The terms of office were set for three years, and limited the terms to three for a maxi-

mum total of nine years of service on the Board.

A study report from the Council on Medical Education and Hospitals, recommending that recognition should not be granted to the American Board of Abdominal Surgery as a specialty board, was approved by the House. The House also declared its disapproval in principle of establishing specialties which are based largely or wholly on an arbitrarily defined anatomical region of the body.

In considering a Board report and four resolutions involving surgical assistants and relations between the AMA and the American College of Surgeons, the House declared that the adoption and interpretation of the Principles of Medical Ethics is the prerogative and duty of the American Medical Association.

The House also adopted the six-point statement of policy dealing with utilization of state and federal tax funds to provide voluntary prepayment health insurance protection to assist the aged in meeting the costs of health care services.

In Miscellaneous actions, the House (1) disapproved a suggestion that the Council on Medical Education and Hospitals be replaced by two separate councils on undergraduate and graduate medical education; (2) referred to the Board of Trustees a proposal that at least six members of the Council on Medical Education and Hospitals shall be engaged primarily in the private practice of medicine in hospitals without a medical school affiliation and that no more than four members may be salaried personnel of a medical school or university; (3) approved a resolution that honorariums be provided for the Association's elected officers in amounts to be determined by the Board of Trustees; (4) endorsed a resolution on employment of the handicapped; (5) approved a guide to the organization and operation of airport medical services; (6) endorsed the joint statement on narcotic addiction by the AMA and the National Research Council of the National Academy of Sciences; (7) urged automobile manufacturers to make seat belts standard equipment on all automobiles; (8) recommended that the Council on Medical Education and Hospitals conduct a study of



specialty residencies; (9) reaffirmed its opposition to compulsory coverage of physicians under the Social Security Act, after receiving 11 resolutions opposing coverage and only two favoring the inclusion of physicians.

Dr. George M. Fister, Ogden, Utah, assumed the office of president until the next annual meeting in June, 1963.

### **The Month in Washington** (From the Washington Office, AMA)

The American Medical Association endorsed in principle the Kennedy Administration's proposed mass immunization program, but urged three important changes.

Dr. F. J. L. Blasingame, executive vice president of AMA, outlined the AMA's position in a letter to Rep. Oren Harris (D., Ark.), chairman of the House Commerce Committee which held hearings on the Administration legislation (H.R. 10541) Dr. Blasingame said:

"The American Medical Association endorses the principle of H.R. 10541 as applied to the four infectious diseases named in the bill—poliomyelitis, diphtheria, whooping cough and tetanus—but urges that: (1) the bill be limited to the four named diseases; (2) the bill be financed as a grant-in-aid program with the states participating on a matching formula basis; and (3) the programs be administered by State Health Departments, preserving the well-established and accepted relationships between the United States Public Health Service and the States in matters pertaining to health."

The Committee accepted two of the changes proposed by the AMA—that the program be limited to the four specified diseases and administered by State Health Departments. The bill then was passed by the House and sent to the Senate where it promptly received approval of the Senate Labor and Public Welfare Committee.

The bill would authorize federal grants to states and their political subdivisions for "intensive community vaccination" programs against the four diseases during the next three fiscal years. It would authorize \$14 million for grants in the first year of operation and \$11 million annually for the following two years. The federal funds would be used to purchase vaccine for chil-

dren under age five, and for salaries and related expenses of the state and local immunization programs.

"Our House of Delegates has on many occasions adopted policy resolutions urging immunization against polio, tetanus, and other communicable diseases for which vaccine exist," Dr. Blasingame said. "Although traditionally it has been the policy of the American Medical Association to urge that the best means of administering vaccines is in the doctor's office, with the family physician vaccinating his patients, we also have recognized that intensive immunization against communicable disease is a public health matter."

★

The Public Health Service called on physicians to cooperate with community health officials and voluntary health agencies in launching in September a campaign to vaccinate pregnant women, persons suffering chronic debilitating diseases and the general population over age 45 against Asian influenza.

Surgeon General Luther L. Terry of the PHS urged that as many persons in these groups as possible be protected with one shot, or two if they are prescribed, before winter.

The call for the vaccination campaign was issued after a special advisory group warned that another wave of Asian influenza is due in the United States. The committee said that while accurate predictions are difficult, recent and past patterns of influenza A2 (known as the Asian strain) indicate it probably will occur throughout the nation this winter. The committee said indications were that influenza B would be infrequent.

The committee also recommended that serious consideration be given to immunizing persons in medical and health services, public safety, public utilities, transportation, education and communications fields. Dr. Terry said large scale immunization should be encouraged also in other industries and large institutions where absenteeism is of particular concern.

Previous campaigns included all persons over 65, but the age limit was lowered after study of past outbreaks.

Manufacturers of influenza vaccine were

asked to estimate the amount of vaccine that would be needed and to have an adequate supply ready.

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The Federal Radiation Council said that indications are that radiation received by the average American from nuclear testing is "considerably less than the exposure from natural sources."

But, in a major policy statement, the Council conceded that there is little scientific data to back up this conclusion and that it is difficult to be precise in this field.

"While a considerable body of information has been accumulated on the effects of radiation on animals and man, the possible effects of low doses delivered at low dose rates are insufficiently known to permit firm conclusions about the extremely low exposures resulting from fallout," the Council said in a report, "Health Implications of Fallout from Nuclear Weapons Testing Through 1961."

"We cannot say with certainty what health hazards are caused by fallout from nuclear testing. We expect there will be some genetic effect; other effects such as leukemia and cancer are more speculative and may not occur at all. We can observe that, compared to the number of these same adverse biological effects occurring wholly apart from testing, the additional cases that might be caused by testing are a very small quantity. We conclude that nuclear testing through 1961 has increased by small amounts the normal risks of adverse health effects."

The report said radiation doses from all nuclear tests through 1961 "have generally been a small fraction" of the amount received from natural radio-active sources such as radium in the earth's crust, cosmic radiation from space, and carbon-14 and potassium-40 in the human body.

Basing its estimates on measurements of radioactive particles in air, rain, soil, water supplies, food and human bodies, the Council said the dose from all atomic tests through 1961 was from one-tenth to one-quarter of the amount received from the natural background.

### The Physician Population

The physician population of the U.S. in-

creased by about 4,500 last year, according to an AMA report. A total of 8,023 first licenses to practice medicine and surgery were issued in 1961. But because approximately 3,500 MDs died during the year, the association puts the net gain at 4500, up slightly from the gain reported for 1960. The report also noted that in the past 12 years 11,348 foreign-trained doctors have been added to the U.S. physician population. Of the 8,023 licenses issued last year, only 1,580 went to MDs trained abroad.

### Senate Votes 52 to 48 to Kill Medicare

The Senate killed President Kennedy's socialized program for providing medical care under social security for the elderly by a 52 to 48 roll call vote. The King-Anderson issue is dead for this session of Congress.

The vote to kill the bill came on a motion by Senator Robert Kerr, (D., Okla.), to table the Medicare amendment offered by Senator Clinton P. Anderson, (D., N. Mex.), 20 other Democrats and five Republicans. Those voting for the motion to table voted to kill the bill, and those voting against tabling were actually voting for Medicare.

Tennessee can take little hope on the action of its two Senators since Senator Ke-fauver and Senator Gore voted against tabling which in effect was a vote for Medicare. Here is how the Senate voted:

#### *For the Motion to Table (52)*

DEMOCRATS—Byrd (Va.), Eastland (Miss.), Ellender (La.), Ervin (N.C.), Fulbright (Ark.), Hayden (Ariz.), Hill (Ala.), Holland (Fla.), Jordan (N.C.), Kerr (Okla.), Long (La.), McClellan (Ark.), Monroney (Okla.), Randolph (W. Va.), Robertson (Va.), Russell (Ga.), Smathers (Fla.), Sparkman (Ala.), Stennis (Miss.), Talmadge (Ga.), Thurmond (S.C.).

REPUBLICANS—Aiken (Vt.), Allott (Colo.), Beall (Md.), Bennett (Utah), Boggs (Del.), Botum (S.D.), Bush (Conn.), Butler (Md.), Capehart (Ind.), Carlson (Kans.), Cotton (N.H.), Curtis (Neb.), Dirksen (Ill.), Dworshak (Idaho), Fong (Hawaii), Goldwater (Ariz.), Hickenlooper (Ia.), Hruska (Neb.), Miller (Ia.), Morton (Ky.), Mundt (S.D.), Murphy (N.H.), Pearson (Kans.), Prouty (Vt.), Saltonstall (Mass.), Scott (Pa.), Mrs. Smith (Me.), Tower (Tex.), Wiley (Wis.), Williams (Del.), Young (N.D.).

#### *Against Tabling (48)*

DEMOCRATS—Anderson (N.M.), Bartlett (Alaska), Bible (Nev.), Burdick (N.D.), Byrd (W. Va.), Cannon (Nev.), Carroll (Colo.), Chavez (N.M.), Church (Idaho), Clark (Pa.), Dodd



(Conn.), Douglas (Ill.), Engle (Cal.), Gore (Tenn.), Gruening (Alaska), Hart (Mich.), Hartke (Ind.), Hickey (Wyo.), Humphrey (Minn.), Jackson (Wash.), Johnston (S. C.), Kefauver (Tenn.), Lausche (Ohio), Long (Mo.), Long (Hawaii), Magnuson (Wash.), Mansfield (Mont.), McCarthy (Minn.), McGee (Wyo.), McNamara (Mich.), Metcalf (Mont.), Morse (Ore.), Moss (Utah), Muskie (Me.), Mrs. Neuberger (Ore.), Pastore (R. I.), Pell (R. I.), Proxmire (Wis.), Smith (Mass.), Symington (Mo.), Williams (N. J.), Yarborough (Tex.), Young (Ohio).

REPUBLICANS—Case (N. J.), Cooper (Ky.), Javits (N. Y.), Keating (N. Y.), Kuchel (Cal.).

## The Medical Self-Help Training Program

### WHAT IS IT?

—A new program to teach American families how to survive a national emergency and how to meet their own health needs if deprived of a physician's services.

—It was developed by the U. S. Public Health Service in cooperation with the American Medical Association's Council on National Security and Committee on Disaster Medical Care.

### IS THERE A FORMAL TRAINING COURSE?

—Yes. The course contained in the Medical Self-Help Training kit consists of 12 lessons to be given under medical supervision by physicians, allied health personnel and specially trained lay instructors. Subjects are: Radioactive Fallout and shelter; Hygiene, sanitation, and Vermin Control; Water and Food; Artificial Respiration; Bleeding and Bandaging; Fractures and Splinting; Burns and Shock; Transportation of the Injured; Nursing Care of the Sick and Injured; Infant and Child Care; Emergency Childbirth.

### WHAT IS THE MEDICAL SELF-HELP TRAINING KIT?

—A training kit has been developed which contains everything needed for instructing; teaching guide; printed lessons with illustrative slides; slide projector; screen; student handbooks; test forms; reference manual, "Family Guide—Emergency Health Care."

### WHO IS ELIGIBLE FOR THE COURSE?

—Every American from Junior High School age upwards.

### WHERE IS INFORMATION AVAILABLE ABOUT THE COURSE?

—The Medical Self-Help Training Program is being administered by states as a cooperative effort of medical, health, civil defense, and educational organizations.

—State Medical Societies, State Health Departments, State Civil Defense Offices or State Offices of Education will be able to provide details about course availability.

## MEDICAL NEWS IN TENNESSEE

### McNairy County General Hospital

The new McNairy County General Hospital was dedicated on June 17th at Selmer. It is equipped to give the best possible care to sick and injured of the county. Officials pointed out that the hospital will be a big asset to the health care of citizens of McNairy County.

### Medical Progress in Bradley County

Bradley County carved another notch in the landmark of medical progress when East Tennessee's newest radioisotope laboratory was officially opened at the Bradley Memorial Hospital in Cleveland. A \$10,000 unit, the facility will be used, through tracer doses of radioisotopes, to gain valuable information in the diagnosis of many conditions such as disorders of the blood, thyroid gland, kidneys, liver and intestines.

### Doctors Donate \$127,800 to Medical Schools in Tennessee

Tennessee's three medical schools received \$127,800.26 in contributions from doctors last year, directly and through the American Medical Association Education and Research Foundation. The AMA announced recently that the University of Tennessee received \$23,678.62 of this amount, Meharry Medical College \$51,842.07, and Vanderbilt University \$52,278.57. The Association said American physicians gave a total of \$4,731,574.09 to medical schools last year.

### East Tennessee Pathology Association

The East Tennessee Association of Pathologists met recently at Oak Ridge. The scientific session was held at the Oak Ridge Hospital and was attended by more than twenty visiting pathologists from cities throughout the East Tennessee area. Speakers included: Dr. Ralph M. Kniseley, Dr. Bill M. Nelson and Dr. Alex Carabia of Oak Ridge. Visiting speakers were: Dr. Richard Crain from East Tennessee Baptist Hospital and Dr. Daniel Beals from the University of Tennessee Memorial Hospital, Knoxville.

## Vanderbilt University School of Medicine

Dr. Randolph Batson, professor of pediatrics at Vanderbilt, has been named acting dean of the school to succeed Dr. John W. Patterson who is resigning to return to teaching and research. In addition to serving as dean, Dr. Batson will continue to participate in the activities of the Department of Pediatrics.

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The Vanderbilt Polio and Birth Defects Center has received new grants totaling \$85,256 from the National Foundation. The grants brought to more than 1 million dollars the total awarded to Vanderbilt in the past ten years.

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The Life Insurance Medical Research Fund has announced a grant of \$11,000 to be used by Dr. Victor A. Najjar in a study of allergy and allergic diseases as related to immunity.

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Three members of the faculty have been awarded grants totaling \$27,995 by the American Heart Association. The awards went to Dr. Roger H. Bowman, assistant professor of physiology, Dr. Murray Heimberg, associate professor of pharmacology, and Dr. George V. Mann, associate professor of nutrition. Dr. Bowman's grant will support a study of the factors that determine the sources of energy used by the heart muscle under various conditions. Dr. Heimberg's grant will be used to study the influence of hormones on the handling of certain fats by the liver and the manner in which this activity relates to the hardening of the arteries. Dr. Mann will use his grant to investigate a theory that hardening of the arteries may result from a disturbance of the processes through which cholesterol is broken down and excreted.

## University of Tennessee College of Medicine

Seven staff members of the School of Basic Medical Sciences have been promoted: Dr. E. Foster Williams, from associate professor of biochemistry to professor; Dr. N. R. Diluzio, from associate professor of physiology to professor; Dr. Jean Holbrook, from instructor of anatomy to assistant professor; Dr. Joe Hall Morris, from assistant professor

of anatomy to associate professor; Dr. Clark E. Grosvenor, from assistant professor to associate professor in physiology; Dr. Roy Martin Smith, from assistant to associate professor of pathology; and Dr. James F. Fisher, from assistant professor of pharmacology to associate professor.

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Marion Laboratories, Inc., pharmaceutical manufacturers, will support a minimal three-year program at the College of Pharmacy for a program in cooperative research; \$178,000 is the amount of the grant. Basic research, with the primary objective a search for knowledge by University scientists, will be united with applied research for the commercial development of new therapeutic drugs.

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Members of the Staff promoted were Dr. Audrey N. Roberts to assistant professor of preventative medicine; Dr. Herbert Gardner to assistant professor of radiology; Dr. Roger T. Sherman to associate professor in surgery; Dr. G. H. Aivazian to professor of psychiatry; Dr. Allen O. Battle to assistant professor of psychiatry; and Dr. Gerald B. Spurr to associate professor in clinical physiology. Dr. Richardo Rafael Fuste is a newly named assistant professor of radiology.

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The U. S. Army Chemical Corps Medical Research Directorate has awarded Dr. Roger T. Sherman, associate professor of surgery, \$30,000 for the study of blister burns.

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The College of Pharmacy has rocketed from 37th in size in the nation three years ago to fifth. The calculation is made from the number of students attending the college and not necessarily the number of laboratories or amount of equipment.

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Dr. Ray C. Womack has been named chairman of the recently created department of microbiology at the University of Tennessee Medical Units. Dr. Womack came to the Medical Units from the Louisiana State University School of Medicine at New Orleans.

★

Thirteen physicians have been appointed



to the staff of the College of Medicine. They are: Dr. Norman H. Davis, Dr. T. Kyle Creason, Jr., and Dr. Thomas F. Mogan, assistants in the department of medicine; Dr. Hector S. Howard, Jr. and Dr. Thomas V. Stanley, Jr., assistants in the department of surgery; Dr. George L. Miller, assistant in the division of anesthesiology; Dr. Joseph M. Scott, assistant in the division of ophthalmology; Dr. Joe Hardy Miller, assistant in the section of neurosurgery; Dr. Alfred Jerome Mueller and Dr. Eugene Wesley Fowinkle, assistants in preventive medicine; Dr. David S. Pankratz, lecturer in the department of psychiatry; Dr. John J. Shea and Dr. David F. Austin, assistants in the division of otolaryngology.

★

Two members of the staff have received U. S. Public Health Service Research Career Awards. They are Dr. Lester Van Middlesworth, professor of physiology, and Dr. Daniel A. Brody, professor of medicine. These awards, conferred by the National Institutes of Health, were established to recognize research contributions made by medical scientists and to support their programs.

Dr. Van Middlesworth joined the Division of Physiology in 1946 after he received his doctor of philosophy degree from the University of California. He received his doctor of medicine degree in 1951.

Dr. Brody has won national recognition for his contributions to electrocardiography, at both the fundamental and applied levels. He also has contributed to the development of phonocardiography and in the course of his studies developed a phonocardiograph which simplifies the technical difficulties in recording phonocardiograms. A graduate of Western Reserve University School of Medicine in Cleveland, Dr. Brody joined the staff as a research associate in physiology and as assistant in medicine. He was made professor of medicine in 1958.

### Survey by MODERN MEDICINE

The publication MODERN MEDICINE surveyed all of the states and physicians' preference by state on the Kerr-Mills versus King-Anderson and other bills pertaining to health care of the aged.

In Tennessee, 73.6% replying to the survey favored the Kerr-Mills approach to the

health care for the aged; 17% preferred the provisions of the "Bow" bill; 2.3% favored the King-Anderson approach; 1.1% favored the Javits proposal; and 6% gave no preference or were against all types of legislation presented on this subject. The survey was made among physicians only.

## PERSONAL NEWS

**Dr. E. Wayne Gilley**, Chattanooga, recently addressed the 14th annual health institute. His subject was "Tick-Tock Time."

**Dr. James C. Hudgins, Jr.** and **Dr. John D. Lay** have announced the opening of their offices for the practice of medicine at the Adamsville Clinic in Adamsville.

**Dr. Bill Couch**, a native of Humboldt, has announced that he will open an office for the practice of medicine in Savannah.

**Dr. Paul Ford Teague** has opened his office for the practice of medicine at a new medical clinic in Parsons.

**Dr. James B. Mills**, Donelson, spoke on President Kennedy's Medicare Program at the Donelson Rotary Club.

**Dr. Philip R. Rothrock** has announced the opening of his office for the practice of medicine in Kingston.

**Dr. Joseph C. Bailey** has announced the opening of his office for the practice of Ophthalmology in Murfreesboro. He is a native of Kentucky.

**Dr. J. K. Kaufman**, Murfreesboro, spoke on the subject "Medicare" at the Murfreesboro Lions Club.

**Dr. B. Tillman Hall**, Clarksville, has announced that he will practice anesthesiology in that city and is a member of the Memorial Hospital staff.

**Dr. Lloyd H. Plemmons**, formerly of North Carolina, announces his association with the Morris Clinic in Somerville.

**Dr. John H. Eason** is one of the new doctors who has selected Adamsville for the practice of medicine.

**Dr. Jean M. Hawkes**, Memphis, recently discussed new diabetes research at a meeting of the Memphis Lay Diabetic Association.

**Dr. Robert C. Koehn, Jr.**, Dyersburg, has moved to Clarksville and is associated with **Dr. W. H. Wall, Jr.** in the practice of obstetrics and gynecology.

The American College of Chest Physicians has awarded a certificate of merit to **Dr. P. J. Sparer**, Professor of Psychiatry and Preventive Medicine at the University of Tennessee College of Medicine.

**Dr. Jesse A. Miller, Jr.**, formerly of Knoxville, has announced that he will enter private practice in Jackson.

**Dr. Daniel F. Beals**, associate pathologist at UT

Hospital has been named a Diplomate of the American Board of Pathology.

**Dr. E. L. Caudill, Jr.**, Elizabethton, has been elected chief of staff at the Carter County Memorial Hospital.

**Dr. W. C. Ramer**, Lexington, has been named Henderson County health officer.

**Dr. Moffet R. Walker, Jr.**, Chattanooga, has been appointed assistant medical director of Provident Life and Accident Insurance Company.

**Dr. Glenn Clark**, Memphis, has been appointed chief of staff and chairman of the medical board of the City of Memphis Hospitals.

**Dr. Ralph H. Monger**, Knoxville, who has served as pathologist for Fort Sanders Presbyterian Hospital, is assuming a similar position at Eastern State Hospital. He will continue to serve as a pathology consultant at Fort Sanders.

"Conduct of the X-ray Technician in the Operating Room" was the subject of an address by **Dr. Baker Hubbard**, Jackson, at the District 5, Tennessee Society of X-Ray Technicians meeting recently in Jackson.

The position of director of the Chattanooga-Hamilton County Health Department has been given to **Dr. Dean Willett Golley**, wife of **Dr. Paul M. Golley**, the retiring director.

**Dr. Albert S. Easley**, Chattanooga, recently addressed the Hamilton County Tuberculosis Association where he spoke on the subject of diabetes.

**Dr. R. A. Calandrucio**, Memphis, was a recent guest speaker at the meeting of the Memphis Chapter of the National Secretaries Association, where he discussed "Medicare."

**Dr. James F. Bellenger** has recently begun general practice of medicine in Clarksville. He is a native of Birmingham, Alabama.

**Dr. Thomas F. Frist**, Nashville, has been elected chairman of the Directors of the Middle Tennessee Heart Association.

**Dr. R. C. Kash**, Lebanon, addressed the junior engineers and scientists summer institute at Tennessee Tech in Cookeville on June 21st.

**Dr. L. W. Diggs**, Memphis, is the new president of the Memphis Academy of Internal Medicine. He succeeds **Dr. Hall S. Tackett**. Other new officers are **Dr. Alys H. Lipscomb**, vice president; **Dr. John Kier**, secretary; and **Dr. Richard L. Wooten**, treasurer.

**Dr. W. G. Rhea**, Paris, has been elected chief of staff of Henry County General Hospital. He succeeds **Dr. I. H. Jones**. Other officers are: **Dr. A. C. Dunlap**, vice chief of staff, and **Dr. Joe D. Mobley**, secretary.

**Dr. O. W. Hill**, Knoxville, has been elected president of the Upper East Tennessee Pediatric Association. **Dr. Clarence J. Duby**, Morristown, was named vice president, and **Dr. Robert Meadows**, Knoxville, was named secretary-treasurer.

**Dr. Lynn F. Curtis**, has been elected chief of staff at the Blount Memorial Hospital in Maryville.

"Closed Chest Heart Massage" was the subject of **Dr. Reid Brown**, Chattanooga, at the American Society of Safety Engineers meeting on June 12th.

**Dr. Foster Hampton, Jr.**, Chattanooga, participated in a panel discussion entitled "TB In Our Town" at the 14th annual Health Institute, sponsored by the Hamilton County Tuberculosis Association.

**Dr. Phil E. Orpet, Jr.**, Memphis, discussed the King-Anderson Medicare Bill at the Memphis Civitan Club recently.

**Dr. Wilborn D. Strode** has joined **Dr. George B. Crafton**, Nashville, in the practice of Obstetrics and Gynecology.

**Dr. Granville W. Hudson** has joined **Drs. Ben R. Mayes** and **John R. Olson**, Nashville, in the practice of Radiology.

**Dr. Norman E. Witthauer** has joined **Dr. Sam C. Cowan, Jr.**, Nashville, in the practice of Obstetrics and Gynecology.

**CORRECTION:** In the July Journal it was reported that **Dr. Chas. E. Taylor** of Lawrenceburg was named president-elect of the Middle Tennessee Medical Association. This should have read: **Dr. Carson E. Taylor** has been named president-elect of the Middle Tennessee Medical Association.

## ANNOUNCEMENTS

### Calendar of Meetings 1962

#### STATE

September 9-10-11—TENNESSEE PEDIATRIC SOCIETY Annual Meeting, Paris Landing Inn, Paris Landing State Park.

October 25-26—TENNESSEE ACADEMY OF GENERAL PRACTICE, 14th Annual Scientific Assembly, Hermitage Hotel, Nashville

#### REGIONAL

August 29-30—POSTGRADUATE INSTITUTE:—Medical Aspects of High School Athletics, Ohio State University, Columbus, Ohio. ADVANCE REGISTRATION ONLY.

September 6—UNIVERSITY OF KENTUCKY MEDICAL CENTER—Course in Cardiovascular Surgery, Lexington, Kentucky

September 6-8—AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNECOLOGISTS, The Homestead, Hot Springs, Virginia

September 14-15—AMERICAN COLLEGE OF OBSTETRICIANS AND GYNECOLOGISTS, District VII, Little Rock, Arkansas

September 21-22—AMERICAN COLLEGE OF OBSTETRICIANS AND GYNECOLOGISTS, District VII, Little Rock, Arkansas

September 24-25—THE TENNESSEE VALLEY MEDICAL ASSEMBLY, Tenth Annual Assembly, Read House, Chattanooga, Tennessee

October 3—POSTGRADUATE COURSE—Anesthesiology—Special emphasis for General Practitioners, General Hospital, Lexington, Kentucky

October 4-6—AMERICAN COLLEGE OF OBSTETRICIANS AND GYNECOLOGISTS, District



IV, Barringer Hotel, Charlotte, North Carolina  
November 12-15—SOUTHERN MEDICAL ASSOCIATION, Hotel Fontainebleau, Miami Beach, Florida

November 15-17—SOUTHEASTERN STATES CANCER SEMINAR, George Washington Hotel, West Palm Beach, Florida

#### NATIONAL

August 27-Sept. 1—AMERICAN CONGRESS OF PHYSICAL MEDICINE AND REHABILITATION, Sheraton-Cleveland Hotel, Cleveland, Ohio

October 1-4—SCIENTIFIC MEETING OF THE INTERSTATE POSTGRADUATE MEDICAL ASSEMBLY, Palmer House, Chicago, Illinois

October 4-6—AMERICAN MEDICAL ASSOCIATION—FIRST NATIONAL CONGRESS ON MENTAL ILLNESS AND HEALTH, Palmer House, Chicago, Illinois

October 15-19—AMERICAN COLLEGE OF SURGEONS, Clinical Congress, Atlantic City, New Jersey

November 25-28—AMERICAN MEDICAL ASSOCIATION, Clinical Meeting, Los Angeles, California

### Birth Defects Meeting

A special symposium on birth defects will be held in Nashville, Sept. 27-28, in conjunction with formal dedication of a new addition to Vanderbilt University Hospital. One of its floors houses a Birth Defects Clinical Study Center established and supported with a March of Dimes grant.

Sponsors of the meeting are The National Foundation—March of Dimes and Vanderbilt University School of Medicine. Principal speaker at the dedication will be Mary E. Switzer, director of the Office of Vocational Rehabilitation of the Department of Health, Education and Welfare.

The conference will bring together leading authorities on birth defects causes and treatment from institutions across the country as well as from Vanderbilt, to present papers on recent developments in research and patient care.

Medical scientists and others from related fields will come to Nashville to take part in the program, from the Rockefeller Institute, University of Colorado, Columbia University, Johns Hopkins University, University of Chicago, Stanford University, University of Texas, National Institutes of Health, Alfred I. DuPont Institute, and Baylor University.

For further information, address Mr. Howard Hall, Vanderbilt University, Nashville.

### Medical Progress Assembly

The Fifth Annual Medical Progress Assembly will be conducted September 30 through October 2, at the Tutwiler Hotel, Birmingham, Alabama. The Assembly is sponsored by the Birmingham Academy of Medicine, composed of some 200 internists, surgeons, and medical specialists, in cooperation with the Alabama Academy of General Practice. Requests for hotel reservations and in-

formation on the Assembly should be sent to 304 Farley Building, Birmingham.

### Medical College of Georgia

The Medical College of Georgia's Department of Continuing Education has planned a series of five intensive postgraduate courses for the fall and winter, 1962-63. The courses planned are: "Clinical Pathology in Medical Practice"—Oct. 23-25; "Diagnosis and Practical Management of Arthritis"—Nov. 13-15; "Orthopedics in General Practice"—Dec. 4-6; "Growth and Development—Management of Common Behavior Disturbances"—Feb. 12-14; and "Gynecologic Problems in Private Practice"—March 12-14. Invited faculty will include nationally known figures.

Each course is acceptable for 18 hours credit by the American Academy of General Practice. Registration is limited to a small group for close participant-faculty communication. Application may be made by contacting Dr. Claude-Starr Wright, Director, Department of Continuing Education, Medical College of Georgia, Augusta, Georgia.

### Physicians Recently Licensed in Tennessee

John A. Broyles, Homewood, Ala.  
Bennett L. Crowder, II, Memphis  
Othello R. Ennis, Chicago, Ill.  
Eugenia Metra, Nashville  
Wilbert R. Tutsch, Chattanooga  
Larson D. Beck, Memphis  
William C. Cain, W. Palm Beach, Fla.  
Harry O. DeBandi, Jr., Memphis  
John F. Taylor, Memphis  
Hugh B. Watts, Lake City  
John F. Wright, Jr., Nashville  
John Turney McAskill, Memphis  
Jack C. Sanford, Jr., Covington  
James R. Guyton, Jr., New Orleans, La.  
Joseph P. O'Bryan, Germantown  
Charles E. Waldroup, Knoxville  
William M. Adams, Jr., Oklahoma City, Okla.  
Teresa Silverman, New Orleans, La.  
Royce Hobby, Memphis  
John A. Burke, Chattanooga  
Jerry M. Bryson, Memphis  
Mary M. Cannon, Clinton  
Francis F. Fountain, Jr., Memphis  
Robert E. Taylor, Clarksville  
Jesse M. Wesberry, Memphis  
Elbert M. Jones, Memphis  
James L. Rollins, Ft. Worth, Texas  
Karl T. Sammons, Knoxville  
William G. Hayes, New Orleans, La.  
Thomas F. Mullady, Chattanooga  
Patrick R. Levesque, Nashville  
Charles M. Porter, Nashville  
Alan L. Watts, Denver, Colorado  
Larry H. Johnson, Memphis  
Robert E. Northrop, Knoxville  
William A. Potter, Memphis  
Ralph M. Greenbaum, Memphis  
Jerry G. Bagwell, New Orleans, La.  
John M. Appling, Cleveland

Robert D. Macmillan, Biloxi, Miss.  
William O. Campbell, Memphis  
Don R. Tielens, Memphis  
William A. Sims, Memphis  
Samuel F. Cox, Edmonton, Alberta, Canada  
Robert C. Mulliniks, Jr., Memphis  
Robert E. Palmer, IV, Memphis  
Arthur T. Fort, III, Memphis  
George W. Jenkins, II, Memphis  
Joseph S. Talley, Memphis  
John R. Nelson, Jr., Winston Salem, N. C.  
William M. Mitchell, Baltimore, Md.  
Henry B. Dearman, Johnson City

### Emory University

The Fourth Annual Postgraduate Course in Ophthalmology will be presented on Nov. 29 and 30, at the Grady Memorial Hospital, Atlanta, under the sponsorship of the Department of Ophthalmology, Emory University School of Medicine. The guest lecturers will be Dr. James H. Allen, Chairman of the Department of Ophthalmology, Tulane University School of Medicine, New Orleans; Dr. Gordon Bruce, Professor of Clinical Ophthalmology, College of Physicians and Surgeons, Columbia University, New York; and Dr. John McGavie, Professor of Ophthalmology, Temple University School of Medicine, Philadelphia.

### American College of Surgeons

The 1962 Interim Meeting of the Tennessee Chapter of the American College of Surgeons will be held, Saturday, Sept. 29, at the Vanderbilt University School of Medicine, beginning at 9:30 a.m.

### Nation's Oldest Essay Contest

The Trustees of America's oldest medical essay competition, the Caleb Fiske Prize of the Rhode Island Medical Society, have announced two subjects for this year's dissertation, open to any Doctor of Medicine in the nation, for which a cash prize of \$500 will be awarded. The subjects chosen are "Etiological Factors in the Development of Congenital Anomalies," and "Progress in the Relief of Hearing Defects." An entry on either subject must be typewritten, double-spaced, and should not exceed 10,000 words. Essays must be submitted by Dec. 11, to the Secretary, Fiske Fund, Rhode Island Medical Society, 106 Francis Street, Providence 3, Rhode Island.

### Cancer Conference

The program for the ninth annual Southeast Missouri Cancer Conference has been arranged and invitations are being issued to physicians of Southern Illinois, Western Kentucky, Northern Arkansas, Northwestern Tennessee, and Southeastern Missouri. It is scheduled for Oct. 7, at Cape Girardeau, to be held at the Colonial Tavern Restaurant. Registration will start at 12:30. The banquet and evening session will begin at 6:30.

Guest speakers will be William T. Newton, M.D., Washington University School of Medicine, speaking on "Immune Response to Cancer and the Role of Virology"; Paul J. Murison, M.D., Tulane University School of Medicine, "Endocrine Therapy in Carcinoma"; Edward T. Krementz, M.D., Tulane University School of Medicine, "Regional Chemotherapy of Cancer"; and Gerald O. McDonald, M.D., University of Illinois College of Medicine, "Controlling Cancer Dissemination."

The conference is sponsored by the American Cancer Society, the Missouri State Medical Association, the American Academy of General Practice, and the Cape Girardeau County Medical Society.

### The AMA National Congress on Mental Illness and Health

The American Medical Association will hold its first National Congress on Mental Illness and Health in Chicago, October 4-6.

The purpose of this Congress, held with the cooperation of the American Psychiatric Association and the support of the National Association for Mental Health, is to implement the broad, new mental health program developed by the AMA's Council on Mental Health. This program represents years of study and discussion and draws heavily upon sources such as *Action for Mental Health*, the AMA's Preliminary Conference on Mental Illness and Health, and meetings with the chairmen of the AMA's State Committees on Mental Health.

More detailed information on the Congress and copies of the AMA mental health program can be obtained from the Council on Mental Health, American Medical Association, 535 N. Dearborn Street, Chicago 10, Illinois.

### Tennessee Pediatric Society

The annual meeting of the Tennessee Pediatric Society will be held at the Paris Landing Inn, Paris Landing State Park, on September 9, 10 and 11, 1962.

Visiting speakers are: Warren Wheeler, M.D., Professor of Pediatrics, Ohio State University; Floyd Denny, M.D., Professor of Pediatrics, The University of North Carolina, Chapel Hill; and Harry Shirkey, M.D., Professor of Pediatrics, University of Alabama.

Visiting and guest physicians are welcome, including general practitioners, interns and residents. Registration fee is \$5.00.

The Society will be the host at "Welcome Hour" on Sunday night at 6 p.m. and again for a cocktail party on Monday. The scientific sessions are Monday morning and afternoon, and Tuesday morning.

Reservations should be made with Mr. Elmer Wood, Manager, Paris Landing Inn. Send a copy of this to Dr. William G. Crook, Jackson, Secretary-Treasurer.



## PLACEMENT SERVICE

*The Placement Service of the Tennessee State Medical Association is designed to assist doctors and communities to get together. Further information and contacts to both physicians and communities are available from the Public Service Office, 112 Louise Avenue, Nashville 5, Tennessee.*

### Locations Wanted

A Board certified surgeon, 50 years of age, would like to establish general, thoracic or endoscopy practice with an associate, or as assistant, clinical or solo. Protestant; married; graduate Syracuse University School of Medicine. Will consider any section of Tennessee, any size community. Available upon notice. LW-418

A 32 year old physician would like to establish either clinical or associate practice of internal medicine in Tennessee community containing or near medical school. Married; graduate Bowman Gray of Wake Forest. Available immediately. LW-421

A 33 year old Otolaryngologist would like clinical, assistant or associate practice in any community in Tennessee of considerable size. If conditions favorable, would consider solo practice. Married; graduate Jefferson Medical College of Philadelphia. Available September 1962. LW-433

A Board eligible Ob-Gyn with four years residency, would like clinical or institutional practice in any community in Tennessee. Married; 32 years of age; graduate University of Tennessee. Available immediately. LW-435

A 33 year old anesthesiologist, graduate of the University of Oklahoma, would like to establish clinical practice in any community in Tennessee of 50,000 plus. Married; available September 1962. LW-439

A 29 year old physician currently completing active military duty would like partnership of associate practice in pediatrics in any community of Tennessee of 50,000 population, plus. Married; graduate Bowman Gray School of Medicine; two years residency training. Available September 1962. LW-445

A 44 year old Board certified surgeon would like to establish associate practice in West Tennessee area of large population or with excellent schools. Graduate of University of Michigan; three years residency; married; presently in practice. Available immediately. LW-450

Pathologist, Board certified in both clinical and anatomic, would like associate practice in any large city in Tennessee. Graduate Cambridge University in England; 36 years of age; married; four years residency. Available immediately. LW-451

A 32 year old native Tennessean, graduate University of Tennessee, completing training in surgery, is interested in practice in West or Middle Tennessee. Available June 30, 1963. LW-452

A general practitioner would like to establish clinical or group practice in any community in Tennessee of 10,000 plus. Married; 29 years of age; graduate University of Louisville. Available August 1962. LW-453

### Physicians Wanted

Small southern Tennessee community in need of a general practitioner to replace retired M.D. Hospital within 15 mile area. Near large industrial area; large local trade area. Good location. PW-142

Physician in Middle Tennessee community of over 15,000 in need of physician for practice of Ob-Gyn either on good salary plus percentage, graduating into full partnership, or associate. PW-161

One year free rent offered to one or two physicians wishing to locate in thriving East Tennessee community with trade area of 35,000. Seventy-five bed hospital; near TVA dam and recreational area. PW-165

Well established, prosperous community immediately adjacent to large city in need of general practitioner to establish solo or clinical practice. PW-168

Physician in east Tennessee town of 2,000 would like to share office and equipment with associate general practitioner. Good housing facilities available. Hospital within 15 miles. PW-169

FOR SALE: lucrative medical practice and new, modern, centrally heated and air-conditioned, fully equipped office in uptown location. Middle Tennessee town of 10,000. Trade area 30,000. Financing can be arranged. Owner desires to retire from private practice. PW-174

General practitioner in Middle Tennessee town of 1,200 (trade area much larger) would like an associate with at least 2 years residency in general surgery, not over 45 years of age. Good schools; near excellent recreational facilities; housing and office space adequate. Some office equipment available. PW-175

One or two physicians needed in East Tennessee community of 15,000 population to replace now practicing physicians who are leaving for practice in hospital elsewhere. Housing, office space and equipment available. Good schools, recreational facilities. Hospital 17 miles. PW-178

General practice available Jan. 1, 1963, in upper West Tennessee community of over 800; hospital facilities nearby; no other doctor in area. Clinic owned by town, now leased; completely equipped; well established practice; housing available; any financial arrangements can be easily arranged. PW-179

Physician in East Tennessee city of 200,000 needs general practitioner for assistant practice in 27 bed private hospital. One year internship desired. Office space and office equipment provided. PW-181.

## Extracorporeal Perfusion Techniques In Cancer Chemotherapy\*

E. CONVERSE PEIRCE, II, M.D.,† Knoxville, Tenn.

*More and more attention is being given to the use of cancerocidal drugs applied locally by perfusion. The current status of such management has been reviewed.*

The recognition that nitrogen mustard ( $\text{HN}_2$ )\*\*, a war gas, possessed anticancer potentialities analogous to those of ionizing radiation, and the development of synthetic antimetabolites such as aminopterin, a folic acid antagonist effective against some leukemias, led to an intense effort to develop and exploit chemicals effective against cancer. Although many compounds were active against cancer, they were found to be limited in their potential because of concomitant destruction or depression of normal body cells, especially in the bone marrow and gastrointestinal tract. As early as 1950 it was recognized that the therapeutic effect of drugs could be enhanced and the toxic action minimized by intra-arterial injections into specific tumor containing regions of the body.<sup>11</sup> In 1958 interest in regional chemotherapy of cancer was further stimulated by Creech and associates<sup>5</sup> who utilized a regional extracorporeal

heart-lung to limit the action of the agent to a specific area. There has now been extensive and enthusiastic use of methods of regional perfusion and a review of the situation is indicated. Are these methods of sufficient simplicity and safety so they may be generally recommended in large groups of patients? Are the results limited to subjective changes such as the relief of pain? Has there been useful tumor regression and enhanced survival? Have the best results been merely palliative or have there been apparent cures?

An attempt will be made to answer some of these questions, partly on the basis of experience in cancer chemotherapy including a small number of perfusions performed mainly for other physicians, but more especially on the basis of reports appearing in the current literature.<sup>6,14</sup>

### Apparatus

A variety of heart-lungs including the disc and bubble types have been widely used in regional perfusion and several are available in disposable form.<sup>18,20</sup> Although any heart-lung may be employed, it is desirable to have a low priming volume, simplicity of monitoring, and atraumatic handling of the blood. These criteria are best met by the use of a small membrane lung and atraumatic blood pumps, since the membrane lung has a small, essentially fixed volume, requires no monitoring, and is the least traumatic of available types (Fig. 1).<sup>14</sup> A need for versatility of approach requires that the circuit include a heat exchanger. Suitable tourniquets, canulas, and vascular instruments are also

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†From the University of Tennessee Research Hospital, Knoxville, Tenn.

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\*\*Methyl-bis (b-chloroethyl) amine hydrochloride.



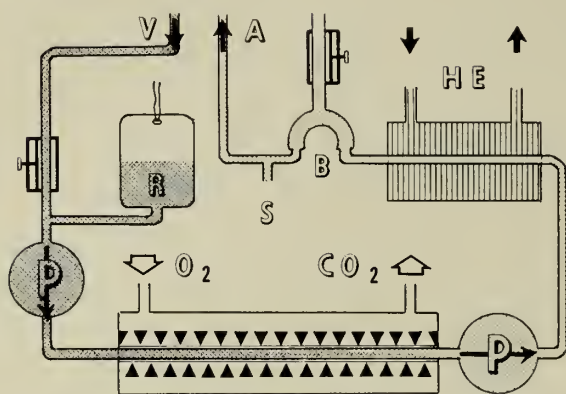


FIG. 1. Diagrammatic representation of closed extracorporeal perfusion circuit incorporating a membrane lung. Regional venous blood (V) is pumped (P) through the membrane lung where  $\text{CO}_2$  is exchanged for  $\text{O}_2$ . The oxygenated blood is pumped through the heat exchanger (HE), bubble trap (B), and into a regional artery (A). R = closed reservoir consisting of a plastic blood bag. S = tube for sampling and administering drug.

necessary. Perfusion technics are relatively simple and not unduly dangerous.

### Chemotherapeutic Agents

A wide variety of cancer retarding or cancerocidal agents are potentially available,<sup>17</sup> but the most useful drugs are the alkylating agents nitrogen mustard ( $\text{HN}_2$ ) and phenylalanine mustard (PAM).<sup>4,5,20</sup>  $\text{HN}_2$  is almost completely "fixed" in less than eight minutes and is thus an ideal short-acting agent while PAM retains significant activity up to six hours and is, therefore, useful where a more prolonged tumor effect is desired (Table 1).<sup>3</sup> The action of these and other agents may be considerably enhanced by a variety of means

\*  $\pi$ -di(2-chloroethyl)-amino-L-phenylalanine.

all of which must be carefully considered to provide maximum therapeutic effect with reasonable safety.<sup>1</sup>

**Oxygen Tension:** The maximum local effect of alkylating and other agents is apparently obtained when  $\text{pO}_2$  is kept at a high level,<sup>12</sup> though there are some dissenting reports suggesting that anoxia may actually enhance the chemotherapeutic effects.<sup>1,7</sup>

**pH:** Somewhat meager data suggest that maximum tumor effect is achieved if both acidosis and alkalosis can be avoided.<sup>20</sup>

**Temperature:** The effect of the anticancer drugs is greatly increased if the temperature is kept normal or is slightly elevated, whereas effects on both cancer and normal tissue are greatly diminished by the use of hypothermia.<sup>15,21</sup> This provides not only means of improving therapy but also a method of protecting unperfused areas (Table 1, Fig. 2).<sup>21</sup>

### Reduction of Complications

**Leakage:** Except in areas of the body such as the extremities, where tourniquets may be used effectively, leakage of blood from the area of "isolation" perfusion into the systemic circulation and vice versa is very large (Table 1, Fig. 3).<sup>3,18-20</sup> The leakage factor varies greatly from region to region being highest in perfusions involving the external carotid artery because of this region's rich network of anastomoses.<sup>11,19</sup> Long acting agents may not safely be employed in regions with a high leakage factor (Table 1). Leakage may be reduced considerably by the use of low perfusion

Table I  
FLOW RATES, LEAKAGE, AND DRUG DOSAGE FOR REGIONAL PERFUSION  
ADULTS

| Artery Cannulated  | To Perfuse        | Flow<br>cc/Kg/min | Leakage<br>Per Hour | Dose mg/Kg    |         |
|--------------------|-------------------|-------------------|---------------------|---------------|---------|
|                    |                   |                   |                     | $\text{HN}_2$ | PAM**   |
| * Popliteal        | Leg               | 1.0- 2.0          | < 5% •              | 0.3-0.5       | 1.0-1.5 |
| Femoral            | + Lower Extremity | 2.0- 3.0          | 10-20% •            | 0.5-0.8       | 1.5-2.5 |
| Iliac              | Pelvis            | 2.0- 4.0          | 35-60% ***          | 0.8-1.0       | —       |
| * Aorta            | a Abdomen         | 5.0-10.0          | 50-60%              | 0.8-1.0       | —       |
| * Iliac            | e Thorax, etc.    | 20.0-25.0         | Large               | 0.6-1.0       | —       |
| Axillary           | + Upper Extremity | 1.0- 2.0          | < 5% •              | 0.3-0.5       | 1.0-1.5 |
| * External Carotid | Face and Neck     | 2.0- 3.0          | 70-80%              | 0.3-0.5       | —       |

\* No personal experience.

\*\* Must be washed out since drug is active up to 6 hours.

+ Consider concomitant node dissection.<sup>20</sup>

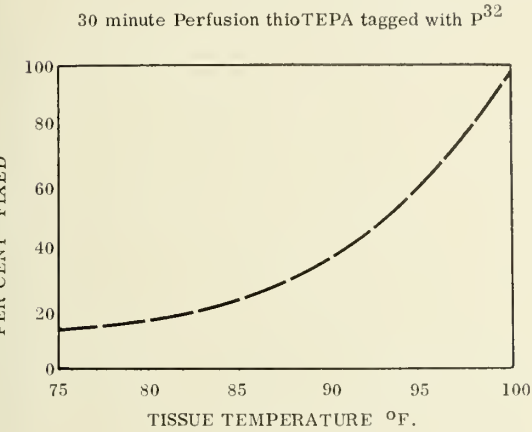
a Combined with general hypothermia.

e Drug given into nonperfused area. Perfused area hypothermic.<sup>21</sup>

• With tourniquet.

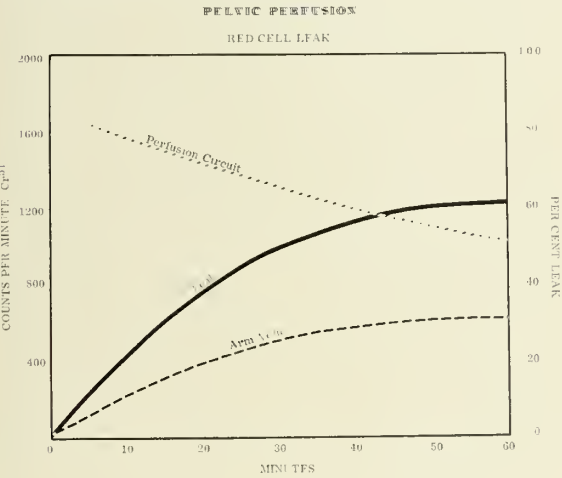
\*\*\* Reportedly reduced to 6% by abdominal tourniquet.<sup>18</sup>

EFFECT OF TEMPERATURE ON TISSUE "FIXATION"  
OF AN ALKYLATING AGENT



Modified from Rochlin et al.<sup>15</sup>

FIG. 2. Alkylating agents are much less active when the temperature is reduced. This is shown by the degree of tissue fixation at varying temperatures. At 75° F. fixation is only 15% of that at 100° F. for thioTEPA.



Modified from Clarkson and Lawrence<sup>3</sup>

FIG. 3. Leakage from the area of "isolation perfusion" is much larger than was initially expected. This is shown for the pelvic area where the percentage of tagged red cells falls steadily in the perfusion circuit while rising in the remainder of the body. In the instance illustrated, leakage was approximately 60% at the end of one hour. The leakage of drug does not necessarily parallel the red cell leakage since other factors such as tissue fixation are equally important.

rates in the "isolated" area, by the judicious occlusion of large vessels, and by employment of tourniquets.<sup>3,8,13</sup>

**Washout:** When long acting agents are used even in well isolated regions, drainage of blood from the area at the end of the perfusion with reinfusion of fresh blood is usually desirable to prevent "unfixed" agent from entering the general circulation. This

is especially true when PAM is employed.<sup>20</sup>

**Neutralization:** A variety of combinations are available;<sup>3</sup> for example: The administration of sodium thiosulfate in the systemic area can neutralize leaked HN<sub>2</sub>.<sup>16</sup> Systemic protection from amethopterin may be provided by the administration of citrovorum factor.<sup>2</sup>

**Temperature:** As noted above the action of the anticancer agents is decreased by hypothermia. General body hypothermia may, therefore, be employed to provide bone marrow protection during regional perfusion with warm blood even when the perfused area is very poorly isolated.<sup>18,21</sup>

Surgery

The use of intensive regional perfusion generally does not contraindicate concomitant surgery although there is probably some initial delay in wound healing.<sup>10</sup> For tumors such as malignant melanoma where regional lymph node metastases are common, perfusions utilizing vessels in the area of regional lymph node drainage (groin and axilla) should probably not be employed without a preliminary lymph node dissection. This is important because surgery for cannulation of the vessels cuts through regional lymphatic tissue preventing a proper en bloc dissection.<sup>20</sup> The use of regional perfusion in a manner similar to pre-operative irradiation may make possible or facilitate both palliative and curative radical procedures.<sup>3</sup>

Effectiveness

Possible complications are illustrated in table 2. By far the most serious complica-

Table 2

| COMPLICATIONS OF REGIONAL PERFUSION |      |                    |
|-------------------------------------|------|--------------------|
| DEPRESSION                          | BONE | TISSUE NECROSIS    |
| MARROW                              |      | "Toxic" reaction   |
| Death                               |      | Poor wound healing |
| Infection                           |      | Slough (especially |
| Hemorrhage                          |      | fistula)           |
| NERVOUS SYSTEM                      |      | Gangrene extremity |
| DAMAGE                              |      | PIGMENTATION       |
| Paralysis                           |      | THROMBOPHLEBITIS   |
| Hypesthesia                         |      |                    |

tion is too great a depression of the bone marrow with a pancytopenia sometimes leading to severe sepsis, hemorrhage, or death. Figure 4 illustrates a typical effect of marrow depression. The risk of dangerous marrow depression increases with



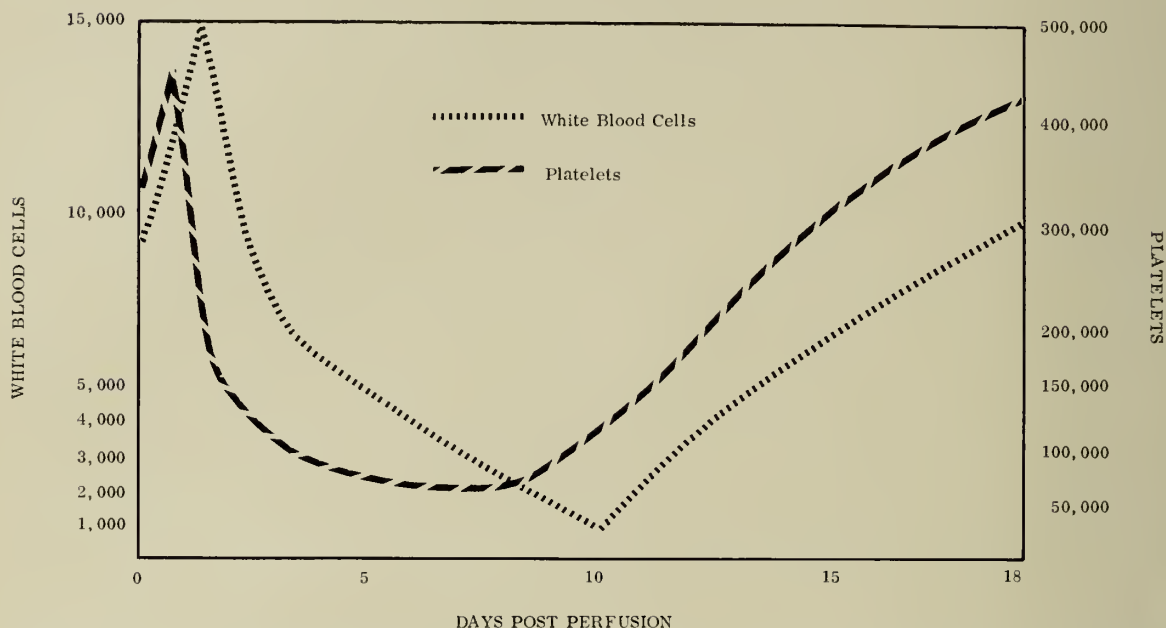
PELVIC PERFUSION WITH 0.8 Mg per Kg  $\text{HN}_2$ 

FIG. 4. A 40 year old white woman with pelvic metastases from carcinoma of the endometrium perfused, after occlusion of the aorta and inferior vena cava, with 0.8 mg. per Kg. of  $\text{HN}_2$ . The

precipitous drop in white blood cells and platelets, reaching peaks at 10 and 8 days respectively, are shown. Normal levels were not reached until approximately 18 days after perfusion.

serial perfusions and is also higher in those who have had irradiation.<sup>9</sup> In pelvic or peripheral perfusions this is manifested in paralysis or hypesthesia and may be very disabling. For this reason other alkylating agents such as S-46\* have been developed. Preliminary reports would suggest that S-46 has a higher therapeutic index than  $\text{HN}_2$ .<sup>8</sup>

The results to date are shown in table 3. In general, peripheral malignant melanomas with or without regional metastases have responded better than any other tumors.<sup>4,20</sup> In some cases freedom from any detectable residual tumor for periods up to three years suggests that the perfusion chemotherapy

may actually have produced an occasional cure.<sup>19</sup> Very useful results have been obtained in many sarcomas of soft tissue, in adenocarcinomas of the ovary and endometrium, and to a lesser extent in some other adenocarcinomas. In many instances, although no detectable regression has occurred, there has been dramatic and prolonged relief of previously intractable pain. Perfusions may, therefore, occasionally be useful in cases such as carcinoma of the pancreas where all other forms of treatment are extremely unsatisfactory.<sup>18</sup> Our small series of about 25 cases has yielded results generally in agreement with the literature.

\*N N-ethylene bis 2-chloroethyl-thioacetamide.

Table 3  
EFFECTIVENESS OF REGIONAL PERFUSION

| Tumor Type           | Location            | Good | Fair | Poor |
|----------------------|---------------------|------|------|------|
| Melanoma             | Extremities         | X    |      |      |
|                      | Regional Nodes      | X    |      |      |
| Sarcomas Soft Tissue | Extremities         |      | X    |      |
|                      | Others              |      | X    |      |
| Sarcomas Bone        | Any                 |      |      | X    |
| Squamous Carcinoma   | Head, Neck & Anus   |      | X    |      |
|                      | Others              |      |      | X    |
| Adenocarcinomas      | Endometrium & Ovary |      | X    |      |
|                      | Others              |      |      | X    |
| Neural Tumors        | Any                 |      |      | X    |

### Indications

Table 4 summarizes the general indica-

**Table 4**

#### INDICATIONS FOR REGIONAL PERFUSION

##### PALLIATION

Relief of pain

Tumor regression

Facilitate surgery

##### CURE

Permit Radical Surgery

tions for regional perfusion of cancer. As noted above one must consider carefully both the type of tumor and the region. As more statistical data become available regarding results with older agents, and as newer anticancer drugs are introduced, the absolute value of regional perfusion will be defined more precisely. At the moment there would appear to be a wide variety of potential applications. Except in the case of malignant melanoma, soft tissue sarcoma, and a few other lesions, however, perfusions should be limited to far advanced cases where other methods of treatment are impractical.

### Summary

A wide variety of methods and a considerable number of agents have been used for regional perfusion of cancer during the last four years. The procedure can most easily be performed in extremities but is applicable to many other body regions also. Perfusions may be carried out with a minimum of risk and, where susceptible tumors are treated, with a high percentage of useful tumor regression. In many cases where pain is prominent, although no tumor regression is subsequently demonstrable, useful palliation may be achieved. Nevertheless, with the exception of an occasional peripheral malignant melanoma, the results of treatment appear to be entirely palliative rather than curative. In general, therefore, regional perfusion should be used only as an adjunct to established methods of surgery and irradiation.

### References

1. Ausman, R. K. and Aust, J. B.: Analysis of Agents for Use in Isolated Perfusion, *Surg. Forum* 12:123, 1961.
2. Cahill, J. J. and Zeit, P. R.: Intra-arterial Infusions of Pelvic Tumors with Amethopterin, *Am. J. Obst. & Gynec.* 81:970, 1961.
3. Clarkson, B. and Lawrence, W., Jr.: Perfusion

and Infusion Techniques in Cancer Chemotherapy, *M. Clin. North America* 45:689, 1961.

4. Creech, O.: In discussion of No. 18.
5. Creech, O., Jr., Krementz, E. T., Ryan, R. F. and Winblad, J. N.: Chemotherapy of Cancer: Regional Perfusion Utilizing an Extracorporeal Circuit, *Ann. Surg.* 148:616, 1958.
6. Farber, S., Cutler, E. C., Hawkins, J. W., Harrison, J. H., Peirce, E. C., II, and Lenz, G. G.: The Action of Pteroylglutamic Conjugates on Man, *Science* 106:619, 1947.
7. Golomb, F. M., Hall, A. B., Cox, K. R., Schetlen, C. F., Gumpert, S. L. and Wright, J. C.: A Simplified Technic for Regional Perfusion, *Am. J. Surg.* 102:839, 1961.
8. Goodman, L. E., Schilling, A., Kramer, S. T., Ulfohn, A., Miller, S., Kravitz, S., Gaby, S. D., Bakal, D., Witten, B. and Seligman, A. M.: Effective Use of a New Alkylating Agent in Doses Lethal to Bone Marrow with Protection by Tourniquets of Marrow in the Extremities, *Surg. Forum* 12:130, 1961.
9. Hurley, J. D., Wall, T., Worman, L. W. and Schulte, W. J.: Experiences with Pelvic Perfusion for Carcinoma, *Arch. Surg.* 83:111, 1961.
10. Kaiser, G. A., Herter, F. P., Malm, J. R., Demetz, A. and Campione, M. P.: Effects of Chemotherapeutic Agents Administered by Isolated Perfusion Upon Wound Healing, *Surgery* 49:745, 1961.
11. Klopp, C. T., Smith, D. F. and Alford, T. C.: Palliation Achieved in Carcinoma of the Head and Neck with Intra-Arterial Chemotherapy, *Am. J. Surg.* 102:830, 1961.
12. Krementz, E. T. and Knudson, L.: The Effect of Increased Oxygen Tension on the Tumoricidal Effect of Nitrogen Mustard, *Surgery* 50:266, 1961.
13. Martin, D. S., Hobbs, J. C., II, White, H. M., Jr. and Pickens, J.: Experiences with a Pelvic Tourniquet in Man, *Surg. Forum* 12:434, 1961.
14. Peirce, E. C., II, Rogers, W. K., Dabbs, C. H. and Rawson, F. L.: Clinical Experience with Membrane Lung Used in Conjunction with Hypothermia, *J. Tennessee M.A.* 54:39, 1961.
15. Rochlin, D. B., Thaxter, T. H., Dickerson, A. G. and Shiner, J.: The Effect of Tissue Temperature on the Binding of Alkylating Agents in the Isolation Perfusion Treatment of Cancer, *Surg. Gynec. & Obst.* 113:555, 1961.
16. Ross, C. A., Carberry, D. M. and Kraus, G. E.: Protection Against Systemic Toxicity Due to Nitrogen Mustard, *Surg. Forum* 11:43, 1960.
17. Sexton, R. C., Jr.: Rational Use of Cancer Chemotherapeutic Agents. Part I: Antimetabolites and Alkylating Agents, *J. Tennessee M.A.* 55:91, 1962.
18. Singleton, W. W., Parker, R. T. and Mahaley, S.: Abdominal Perfusion for Cancer Chemotherapy, *Ann. Surg.* 152:583, 1962.
19. Stehlin, J. S., Jr., Clark, R. L., Jr. and Dewey, W. C.: Continuous Monitoring of Leakage During Regional Perfusion, *Arch. Surg.* 83:943, 1961.



20. Stehlin, J. S., Clark, R. L., White, E. C., Smith, J. L., Jr., Griffin, A. C., Jesse, R. H., Jr. and Healey, J. E., Jr.: Regional Chemotherapy for Cancer: Experiences with 116 Perfusions, *Ann. Surg.* 151:605, 1960.
21. Young, W. G., Jr., Lesage, A. M., Dillon, M. L., Lee, J. M., Calloway, H. A., Jr. and Reeves, J. A.: Chemotherapy of Intrathoracic Neoplasms Employing Differential Pelvic Perfusion Hypothermia, *Ann. Surg.* 154:372, 1961.

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Embolism and Atrial Fibrillation. Editorial: Askley, John M. *Cardiol.* 9: 491, 1962.

Conversion by anticoagulation and quinidine have been used with increasing frequency in the management of systemic embolism associated with atrial fibrillation. Evidence is presented which questions the "cause and effect" relationship between mural thrombi and atrial fibrillation. Congestive heart failure and underlying endothelial damage seemed to be predominant determinants of thrombosis in non-rheumatic heart disease. Only in rheumatic heart disease with left atrial thrombosis is there a high correlation. Since no effective contraction of the left atrium is usually observed at cardiectomy for mitral stenosis, regardless of rhythm, the importance of conversion by quinidine in preventing thrombosis is questioned in this situation also. On the other hand, despite difficulties in diagnosing recurrent embolism, anticoagulation is felt by many investigators to prolong the patient's survival and decrease further embolic episodes. Emphasis is placed on the danger that conversion of the atrial fibrillation may detract from more reliable and effective antithrombotic drug therapy. (Abstracted for the Middle Tennessee Heart Convention by John H. Griscom, M.D., Nashville.)

# Coxsackie B5 Meningitis

## Report of an Outbreak in a High School Football Squad

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Between August 12 and 15, 1961 physicians serving the involved community became aware that an unusual illness was attacking members of a high school football squad. It was readily apparent that these pupils had infectious disease involving the meninges or central nervous system. Early in the outbreak several of the patients were hospitalized and carefully studied. Spinal fluids were abnormal, showing increased cells and protein, of a pattern that eliminated pyogenic meningitis and lymphocytic meningitis. This was recognized by clinicians as aseptic meningitis perhaps associated with mild encephalitis in a few cases and probably due to a virus. Specimens of stools were secured for viral isolations and blood was drawn for serologic study. It soon became apparent that this was a relatively benign illness even though some of the patients were acutely uncomfortable. Thereafter, additional cases were managed expectantly with study limited to clinical observation. In some instances patients were treated by physicians via telephone.

The observed outbreak was confined to members of the football squad and their family contacts. Though "spread" cases may have occurred in the community their number must have been small. It is certain that a similar outbreak did not occur in the community as a whole.

The high school whose football team was involved is a large one (1500 pupils) serving an upper middle class suburban community in Shelby County.

The nature of the outbreak was studied by a questionnaire directed to each of the 45 candidates who reported for practice beginning August 7, 1961. Questionnaires were distributed by the coach, with the blessing of the Principal, and accompanied by oral instructions that all who were ill

during August or the first half of September were expected to complete and return the questionnaire. Twenty-eight questionnaires were returned and these form the basis of the following analysis.

The first case occurred on August 12, followed by 4 on the 13th, building up to a peak of 7 cases on August 17, with the last case developing on August 25. (Fig. 1.)

FIGURE 1  
COXSACKIE OUTBREAK IN HIGH SCHOOL FOOTBALL TEAM  
DATES OF ONSET, AUGUST 1961

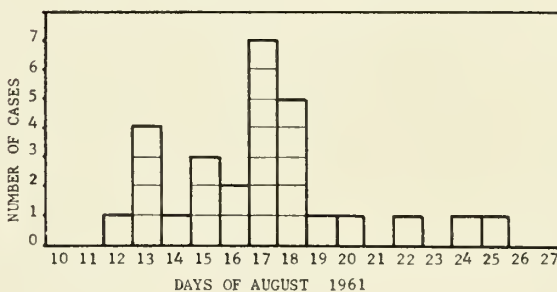


FIG. 1.

Symptoms were reported with the following frequency by the 28 who were ill.

|          |    |                  |    |
|----------|----|------------------|----|
| Fever    | 28 | Soreness of eyes | 11 |
| Headache | 26 | Stiff neck       | 8  |
| Vomiting | 21 | Weakness         | 7  |
| Chills   | 20 | Skin rash        | 1  |

Localized weakness of an arm or leg was mentioned by 7 players. However, careful questioning of each patient and his family indicated that this probably represented generalized weakness. No localized weakness or paralysis was observed by any physician. There were no permanent sequelae. Although the symptom "soreness of eyes" was not included in the questionnaire, 11 patients voluntarily recorded this complaint. "Soreness of the eyes," representing soreness and tenderness of the eye ball or in the eye socket, was evidently a prominent feature of this illness. The headache was severe in a large proportion of the cases. Duration of illness varied from 2 to 14 days with the great majority lasting from 5 and 10 days.

\*From the Memphis and Shelby County Health Department.



Five stool specimens examined in the Tennessee Department of Health Laboratory yielded virus identified as Cocksackie B5.

Though blood specimens were taken on 6 patients, only 2 had both acute and convalescent tests. Each of the latter 2 patients had low titre antibodies against Cocksackie B5 virus in the acute specimen. Both showed a marked rise in titre in the convalescent specimen (16 fold in one, and 64 fold in the other). All six convalescent specimens were positive in titres of from 1:128 to 1:1024.

Examination of sanitary conditions of dressing rooms and equipment used by the team revealed room for improvement in ventilation and housekeeping. The quarters were not arranged for the best sanitary practice and some walls were finished with surfaces difficult to clean. However, these defects were not considered to be of crucial importance in spread of the infectious disease under study. It was learned that many players drank surreptitiously from a garden

hose during or following football practice. It is believed that this practice may have contributed to rapid spread of the infection and to the high attack rate.

### Conclusion

An explosive outbreak of aseptic meningitis caused by Cocksackie B5 virus and affecting at least 28 of 45 members of a high school football squad was observed. It seems likely that drinking directly from a garden hose contributed to spread of the infection. Specimens of stools and blood taken by attending physicians revealed the identity of the causative agent. It is of value to practicing physicians as well as the Health Department to know which viruses are causing illnesses in their community. This can usually be determined by submitting properly collected and handled specimens to the Tennessee State Health Department Laboratory. When an outbreak occurs, specimens ordinarily need be taken from only a few typical patients.

# Diagnosis and Management of Occlusive Disease of the Peripheral Arteries. Part II\*

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*Simple arterial thrombosis* is rare but may occur in polycythemia or may be associated with hematologic infections, neoplastic or collagen diseases, secondary to arterial trauma, or thrombosis may occur as an idiopathic entity (essential thrombophilia). Occasionally atherosclerotic and thrombotic occlusions of the peripheral arteries occur within a short period of time. Symptoms rarely develop within a few hours but may be noted over a period of a few days. It is of interest that in Case 4, the patient was in a hypercortisone state at the time of the relatively acute arterial occlusion. The femoral arterial occlusion was demonstrated on arteriogram to be just below Scarpa's triangle or at the level of the profundus. An occlusion at this level is usually associated with severe ischemia of the extremity; therefore, a thrombo-endarterectomy, arterial graft or bypass procedure may have been indicated in this patient. At that time vascular surgery was not available without the patient being transferred to a larger medical center. Since the patient did not wish to be moved, the usual medical treatment for an acute arterial occlusion was carried out. During the past two years collateral circulation has gradually improved and the patient has been able to carry on average activity although he is moderately restricted by the intermittent claudication. In November, 1960 he was seen at the Mayo Clinic by the late Dr. Ed Allen who advised against further consideration of peripheral vascular surgery.

*Case 4.* This 56 year old Jewish man was first seen in 1958 with the chief complaints of numbness, pain, coldness and discoloration of the right foot during the past five days.

There was no previous history of intermittent claudication syndrome and he had not been known to have peripheral vascular disease or other manifestations of occlusive arterial disease. He had first noted numbness and tingling sensation of

the right foot and hypersensitivity of the toes. Later he had pain in the right foot which was described as dull, aching in character and more severe in the toes.

At the age of 15 years the patient had osteomyelitis of the elbow and forearm which drained off and on for many years. The chronic infection left him with deformity and shortening of the left upper extremity. He had smoked cigarettes about 30 years. He had had recurrent urticaria since 1936. Two years previously his family physician prescribed prednisone for the control of the urticaria. During the past year the patient had gradually increased the dose of the steroids without the supervision of his physician. About 2 months prior to admission the patient began taking an average of 8 tablets per day, or 40 mg. of prednisone. The systems review was not remarkable.

On *physical examination* the patient did not appear in acute distress; however, he was holding the right foot in his hands and complaining of pain. He was moderately obese and the face appeared full and plethoric. There were increased supraclavicular fat pads and small dorsal "hump." There was a deformity and poor development of the left elbow and forearm apparently resulting from the chronic osteomyelitis at age 15 years. The skin revealed multiple large areas of urticaria. The chest examination showed the lungs to be relatively clear on auscultation except for a few expiratory wheezes. The heart was not enlarged; the rate was regular and there were no murmurs audible.

Examination of the left lower extremity revealed normal arterial pulses and there was no evidence of occlusive arterial disease at that time. The significant findings were related to the right leg and foot. The right femoral arterial pulse was palpable but the popliteal and pedal pulses were absent. There was moderate discoloration of the right foot in dependency with mottling and cyanosis of the distal foot and toes. Severe ischemia was evidenced by marked elevation pallor of the right foot and the venous filling was prolonged more than one minute. There was coldness of the leg and foot and there was evidence of impaired sensation of the toes. The patient was admitted to a warm hospital room. The head of the bed was elevated and a Buerger box was placed over the foot of the bed. Heparin, 50 mg. was given every four hours. Steroids were given in smaller doses and gradually withdrawn. The initial B.P. was 160/95. Chlorothiazide controlled the mild hypertension and

\*Continued from the May number.



antihistamines were given for the urticaria. Chymotrypsin was given intramuscularly daily and Varidase was given buccally four times daily. Whiskey, ounces 1½, was given four times daily. There was evidence of rather marked ischemia of the right foot, and because of the acute nature of the arterial occlusion surgical treatment was entertained. An arteriogram revealed complete occlusion of the femoral artery just below Scarpa's triangle at the level of the profundus artery. The patient did not wish to be transferred to another city for operation, and therefore the general medical management was continued. Intra-arterial Tolazoline Hcl. (Priscoline) was injected into the right femoral artery once daily. Each day there was evidence of increase in collateral circulation as indicated by the "goose flesh" and blushing of the skin from the intra-arterial use of the drug.

The laboratory findings revealed an elevation of the WBC. count to 17,500 (70% segs. and 7% stabs). The RBC. count was 3.84 with 11.8 Gm.% Hgb. Urinalysis was negative. The serum cholesterol was 287 mg., the N.P.N. 40 mg. and the fasting blood sugar 96 mg. per 100 ml. Coumadin therapy was regulated by determinations of prothrombin time after heparin had been given for approximately one week. The EKG. was within the normal range. Chest roentgenogram revealed the heart to be normal in size and the lungs were clear. X-ray examination of the thigh showed atheromatous calcification in the right femoral artery.

The patient was discharged from the hospital at the end of three and a half weeks and was instructed in the care and protection of the ischemic right extremity. He was continued on a low fat diet and 200 mg. of cyclandelate were given four times daily. During the first few months following the occlusion the patient had intermittent claudication of the right calf after walking about 100 feet. At each visit he was instructed in detail in the care of the feet and properly fitted shoes. He was then given walking exercises to tolerance with gradual improvement. He developed a small ischemic ulcer of the second toe, and he was advised to avoid walking until the ulcer healed. A dental roll of cotton was placed between the toes to avoid pressure on the ulcer. Oral antibiotics were given until the secondary infection cleared and at the same time Parenzyme (atrypsin) was applied to the ulcer. Later scarlet red was applied to the ulcer daily. Antifungicidal powder was used on the feet daily. The ulcer healed after 2 months and walking exercises were resumed.

In Nov., 1960 the patient was seen at the Mayo Clinic for consideration of vascular surgery and was seen in consultation by the late Dr. Ed Allen. The patient was told that he had done well on medical management and he was advised against the consideration of vascular surgery. He continues to do well and he is able to follow his usual occupation. To date he has not developed

manifestations of coronary or cerebral atherosclerotic disease.

### Popliteal Aneurysms

Arterial aneurysms have always been an object of medical curiosity and no doubt popliteal aneurysms have been known to science for many centuries because of their anatomic accessibility. Atherosclerosis, as shown by the pathologic studies in the following case with bilateral popliteal aneurysms, is the most common cause for aneurysms of the lower extremities. The fact that the popliteal space is the most common location for aneurysms in the lower extremities may be related to the frequent bending of the artery and less protection by muscles. These popliteal aneurysms are frequently bilateral and symptoms may be absent in uncomplicated cases. Increase in venous pattern of the leg below the knee, local pain and swelling occur if the aneurysm becomes large enough to cause pressure on the popliteal vein and nerve. If the aneurysm becomes occluded by a thrombus or when peripheral embolization occurs from a mural thrombus within the aneurysm, symptoms of ischemia are usually present. In some cases the occlusive process due to atherosclerosis involves the arteries distal to the aneurysm sufficiently to produce intermittent claudication and ischemic pain which cannot be related directly to the aneurysm. As a rule the embolic occlusions produce symptoms suddenly whereas the process of arteriosclerosis obliterans is more insidious.

The physical examination is extremely important in making the diagnosis and the aneurysm is usually felt as a pulsating mass in or just above the popliteal space. A short systolic bruit may be present but it is not always heard. The aneurysm may be localized or diffuse and the size varies from a golf ball to the size of a grapefruit or larger. If the aneurysm has become occluded with a thrombus a rather hard, non-pulsatile mass is felt in the popliteal space. The roentgenograms usually reveal irregular lines of calcifications at the margins of the aneurysm. In doubtful cases the diagnosis may be confirmed by arteriography but this is rarely necessary. Arteriovenous fistula can usually be distinguished by the presence of a thrill and machinery-like

bruit, and there is marked increase in venous pattern and venous pressure. The diagnosis can easily be confirmed by arteriography.

Complications of popliteal aneurysms occur frequently and may be serious leading to the loss of an extremity or the patient's life. The most serious complications are embolization distal to the aneurysms from a mural thrombus in the aneurysm, leaking of the aneurysm, and pressure from the aneurysm on the neighboring vein or nerve. Acute occlusion of the aneurysm may occur from thrombosis and may result in severe ischemia with development of gangrene and loss of the extremity.

Gifford, Hines and Janes<sup>1</sup> studied 100 popliteal aneurysms treated at the Mayo Clinic. Thirty-nine of these presented with complications, and 13 of the 51 originally uncomplicated aneurysms developed complications of a serious nature within a few years. Twenty of the 100 aneurysms resulted in amputation of the extremity, either at the initial visit or shortly thereafter. The majority of the amputations were done because of thrombotic occlusion of the aneurysm, or secondary to distal embolism resulting in gangrene of the extremity. These authors conclude that the most satisfactory method of treating popliteal aneurysms is surgical, and it is usually desirable to operate before complications develop. Experiences indicate that the incidence of subsequent amputations is about three times greater in the extremities with popliteal aneurysms which are not treated surgically. It is probably desirable to do a lumbar sympathectomy if the aneurysm is to be excised. Obliteration of the aneurysm and/or replacement with graft, or carrying out a bypass procedure have been recommended in recent years. The ligated aneurysms can be left in place and a bypass can be performed with one of the synthetic grafts.

The following case with bilateral popliteal aneurysms was under medical management for 7 years after having developed complications from the left aneurysm. The patient was first seen with symptoms and signs of acute arterial occlusion associated with embolism distal to the left popliteal aneurysm. It is of interest that this patient

did not have signs of complications or present symptoms related to the right popliteal aneurysm. After the initial examination in this case the patient was advised and urged to have surgical treatment of the aneurysm. The patient refused this without reservations, though he was very cooperative and extremely compulsive in following the advised medical regimen. During the period of observation the patient developed fairly typical symptoms and signs described in popliteal aneurysm with complications. As a result of the distal embolic occlusive process, he had the usual problems of chronic occlusive arterial disease with intermittent claudication syndrome and ischemic pain of the foot including neuropathy pain during periods of severe ischemia of the extremity. The pressure of the aneurysm produced partial venous obstruction and edema of the leg and foot. The bilateral aneurysms were demonstrated by arteriography. Seven years after having the initial embolic complication, complete thrombosis developed within the left aneurysm which resulted in gangrene of the left foot and thigh amputation. The left aneurysm was dissected and photographs were taken and the pathologic findings are described.

*Case 5.* This 73 year old white man was first seen on June 9, 1954 with the complaint of numbness, pain and swelling of the left foot. Eight days before the patient, while picnicking on the lake, stumbled and fell on a rock which resulted in contusion of the left leg and knee areas. The following day he developed numbness and burning sensation in the toes associated with coldness and pain of the toes, and mild swelling of the leg. He stayed in bed with the leg slightly elevated and part of the swelling disappeared. However, he continued to have pain in the toes and distal part of the left foot, especially when elevated. There was fullness and marked tenderness of the calf of the leg. The toes and distal part of the foot were mottled and pale with elevation, and there was a bluish discoloration of the left foot and toes in the dependent position.

In the *past history* the patient stated that for 20 years he had received intermittent treatment for hypertension. For many years he had been troubled with upper gastrointestinal symptoms though no peptic ulcer was demonstrated on x-ray study. Otherwise, the patient had enjoyed good health.

The *physical examination* revealed a short, slightly obese man who appeared well preserved for 73 years. Bilateral arcus senilis was noted. Fundoscopic examination revealed grade I sclerosis and moderate tortuosity of the retinal ar-



terioles but no hemorrhages, exudates or papilledema noted. The B.P. was 160/90.

The significant findings were limited to the lower extremities. There was grade II cyanosis and mottled or reticular-like discoloration of the left foot and leg. The toes were cold and the sensation was diminished. There were multiple superficial varices of both legs, but no stasis skin changes to suggest chronic venous insufficiency. The venous pattern of the left leg was increased and there was moderate tenderness of the left calf. There was a pulsating mass in the left popliteal space which measured approximately 6 cm. in diameter. The left posterior tibial and dorsal pedis arterial pulsations were present but diminished. There was a similar pulsating aneurysmal mass involving the right lower femoral and popliteal area and the right pedal arterial pulses were normal. The patient was admitted to the hospital for treatment. He was given heparin intravenously and whiskey, ounces 1½ every 4 hours. The left leg was slightly elevated and a Buerger box was placed over the lower extremities. On the following day multiple petechiae had developed over the left leg and foot and the venous pattern was prominent below the knees. The calf of the leg was tender. There was still cyanotic discoloration and coldness of the toes. The pedal arterial pulses varied in intensity suggesting considerable vascular spasm. Medical treatment was continued and the ischemia of the left foot gradually improved.

The problem of popliteal aneurysms was discussed in detail with the patient. He was advised that he had developed embolism from a clot in the left aneurysm, and that there was a definite possibility of losing his leg. At that time the advisability of surgery was thoroughly discussed, and combined removal of the aneurysm and a lumbar sympathectomy or an appropriate graft procedure was suggested. The patient was very apologetic but stated without equivocation that he did not want surgery, though he was very willing and eager to follow any recommended conservative treatment. Medical management included a low fat diet, anticoagulants, protection of the lower extremities, control of hypertension, and other supportive measures.

On Oct. 5, 1954 the patient was readmitted to the hospital because of sudden onset of pain in the left foot associated with increased coldness, numbness, and cyanosis of the toes. The prothrombin time determination was 22 sec. with a control of 13 sec. or below the desired therapeutic range in this case. The left posterior tibial arterial pulsation was absent but the dorsalis pedis was barely palpable. The first and second toes were very ischemic with a pre-gangrenous appearance; therefore, it appeared that amputation of the extremity might be necessary. Again the advisability of surgery was discussed in detail with the patient but he refused to consider any surgical approach in the treatment of the aneurysms. Thus general medical treatment, including peripheral vasodilators and heparin intra-

venously was continued. The foot gradually improved and he was discharged from the hospital to be followed as an outpatient. An attempt was made to keep the prothrombin time about two and a half times the control, or ranging around 35 sec. with a 13 to 15 second control. The routine care and protection of the ischemic extremities was emphasized and the patient was advised to avoid trauma to the region of the popliteal aneurysm. Following this embolic episode the patient had intermittent claudication syndrome of the left calf and there was a tendency toward swelling of the left foot and leg. The patient was advised to avoid passive dependency of the left foot and the foot of the bed was slightly elevated at night. The patient was able to care for himself and walked a few blocks each day. Indeed, it was amazing how well this patient seemed to get along for more than 6 years.

The aneurysms, especially the left, gradually increased in size. In March, 1961 the patient developed progressive ischemia of the left foot and leg. Examination at that time revealed that the pulsation of the left aneurysm had markedly diminished and it was our impression that the aneurysm was becoming completely occluded with mural thrombosis and gangrene of the left foot appeared to be imminent. The patient was very reluctant to consent for thigh amputation. However, gangrene progressed and thigh amputation was carried out on Mar. 22, 1961. The pa-



FIG. 2. Left femoral-popliteal arteriogram. (Case 4.)

tient was rather toxic at the time of operation, but he tolerated the procedure very well and his condition seemed satisfactory for about one week following operation. He became mentally confused and his general condition deteriorated rapidly. He developed hypotension and azotemia, and despite all supportive measures he succumbed on the 16th postoperative day.

The bilateral popliteal aneurysms are demonstrated by arteriogram in figures 2 and 3. Roent-

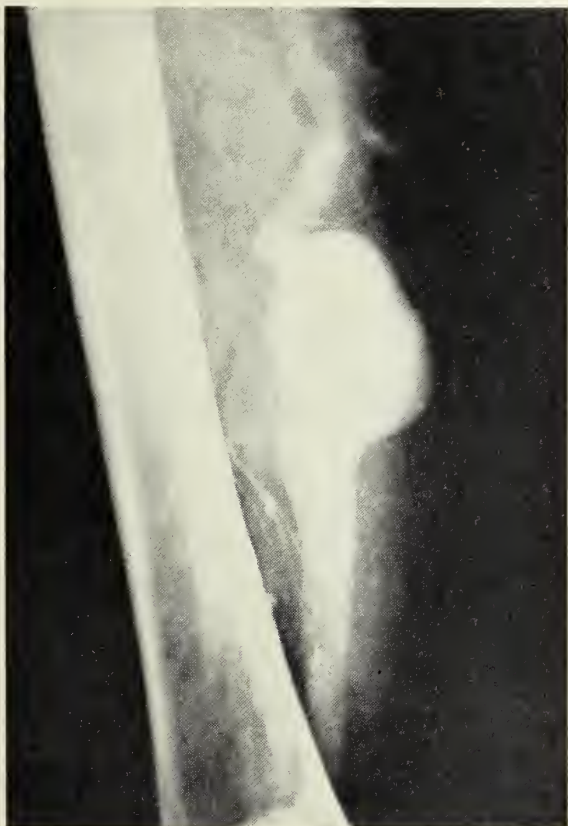


FIG. 3. Right femoral-popliteal arteriogram. (Case 4.)

genogram of the left popliteal aneurysm prior to amputation resulting from complete occlusion of the aneurysm with mural thrombosis is shown in figure 4. Note the calcification of the femoral artery and fine rings of calcium in the outer wall of the aneurysm.

**Pathologic Findings.** The left popliteal aneurysmal mass was dissected from its bed after amputation of the extremity as shown in figures 5 and 6. The femoral artery which enters the proximal end of the aneurysm is held by a Kelly clamp. The complete atheromatous aneurysmal arterial mass was removed as shown in figure 6, measuring 30 x 12 x 11 cm. with the maximal ballooned out aneurysmal dilatation being approximately 20 cm. in diameter. Figure 7 demonstrates the laminated clot which has completely occluded the dilated mass, and atherosclerotic plaques are noted throughout the wall of the aneurysm and in the walls of the proximal and distal arteries. Thus demonstrating the aneurysm resulted from a bal-

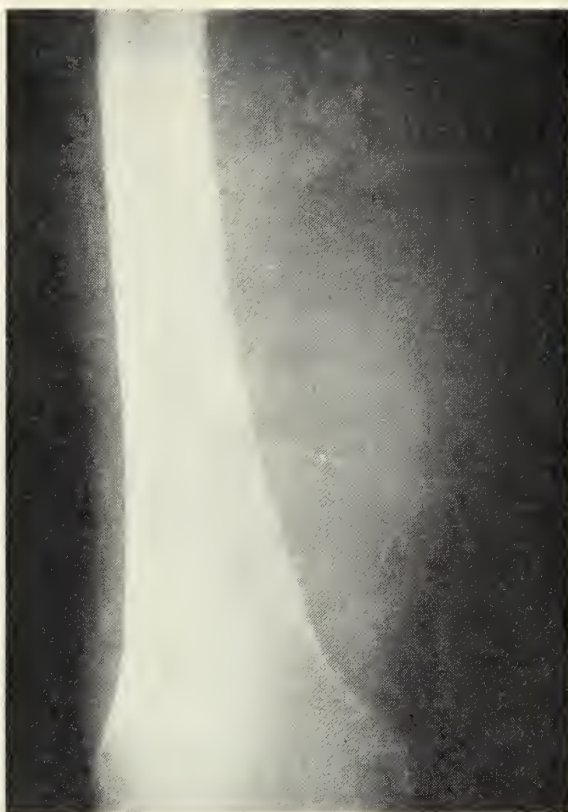


FIG. 4. Roentgenogram of the left popliteal aneurysm prior to amputation resulting from complete occlusion of aneurysm with mural thrombosis. Note calcification of lower femoral artery and outer wall of the aneurysm. (Case 4.)

looning out of the arterial wall. The proximal and distal arteries contain laminated thrombi and marked atherosclerotic changes.

Sections show that the outer wall of the sac resulted from dilatation of the artery. There are many atheromatous plaques and signs of extensive arteriosclerosis. (Fig. 8.) There is proliferation of the intima and there are cholesterol and lipid deposits scattered throughout the connective tissue in the atheromatous plaques. Small amounts of calcium were demonstrated at the base of the atherosclerotic lesions and in the medial coat. There is fragmentation with fibrosis and areas of calcification demonstrated in the media. Fresh and organized thrombus formations were present on the surface of the atherosclerotic changes. No other etiologic or specific cause was found to account for the aneurysm.

#### Discussion

In the cases reported here it has been emphasized that the prognosis in patients with occlusive disease of the peripheral arteries with intermittent claudication syndrome is not always poor.

It is of interest to review the experiences of others who have reported a larger series of patients. Hines and Barker<sup>1</sup> obtained



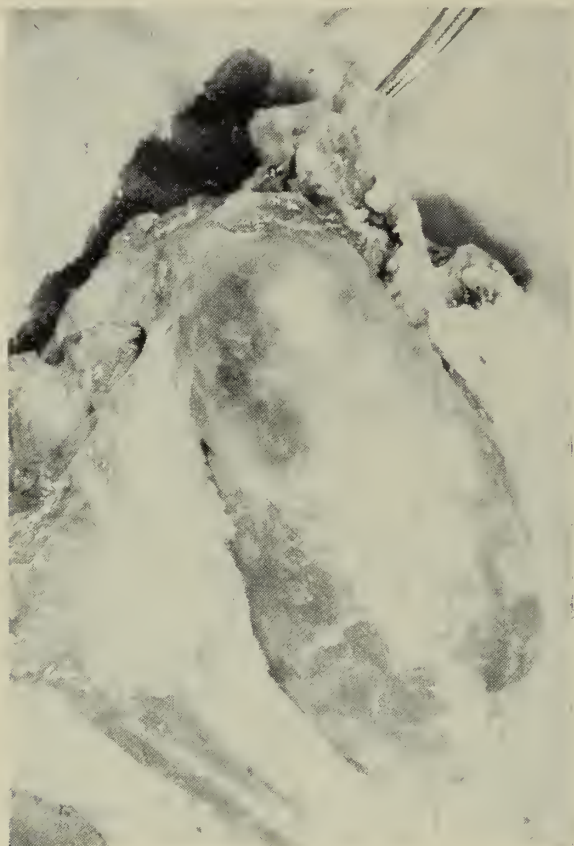


FIG. 5. (Case 4.)

follow-up letters on 116 of 280 patients with arteriosclerosis obliterans and they stated 54.6% died within 3 years of the first visit to the Mayo Clinic and a majority died in a manner which was suggestive of coronary thrombosis; however, over 50% of these patients had ulceration and gangrene, thus representing a more advanced stage of occlusive vascular disease. Massarelli and Estes<sup>20</sup> studied 105 patients who had intermittent claudication due to aorto-iliac disease as shown by decreased or absent femoral arterial pulses. The prognosis of these patients was not considered to be as good as "a normal person of the same age." However, there was a 71% five-year survival rate in this study. Approximately 70% of these patients died with cardiovascular or cerebral vascular disease, thus it is not the peripheral occlusive disease which is a major danger to life, but rather the arterial circulation to the more vital structures which are affected by the same atherosclerotic process. The prognosis of survival of the extremity was extremely good in non-diabetics and in a 10 year period only about 5% came to major amputation, and the in-

cidence of peripheral ischemic manifestation was low in this series. Spaulding<sup>21</sup> studied 108 patients with intermittent claudication, 101 males and 7 females, with the commonest decade being between 50 and 59 years of age. He reported a 13% mortality in 3 years of the onset of the claudication and 25% after 5 years. Of the 32 deaths 17 could be attributed to cardiovascular disease, and coronary artery disease probably caused death in four more patients.

As already emphasized, in our opinion the prognosis of patients with occlusive arterial disease can be improved, especially in co-operative patients, by conscientious medical management. Surgical treatment by thromboendarterectomy and/or grafts or bypass procedures is indicated in selected patients, especially those cases with segmental occlusion of the larger arteries, and most all cases with aneurysms if technically feasible or if surgery is otherwise not contra-indicated. However, one should be cautious in recommending surgical treatment for the majority of the cases with benign arterial insuf-



FIG. 6. (Case 4.)

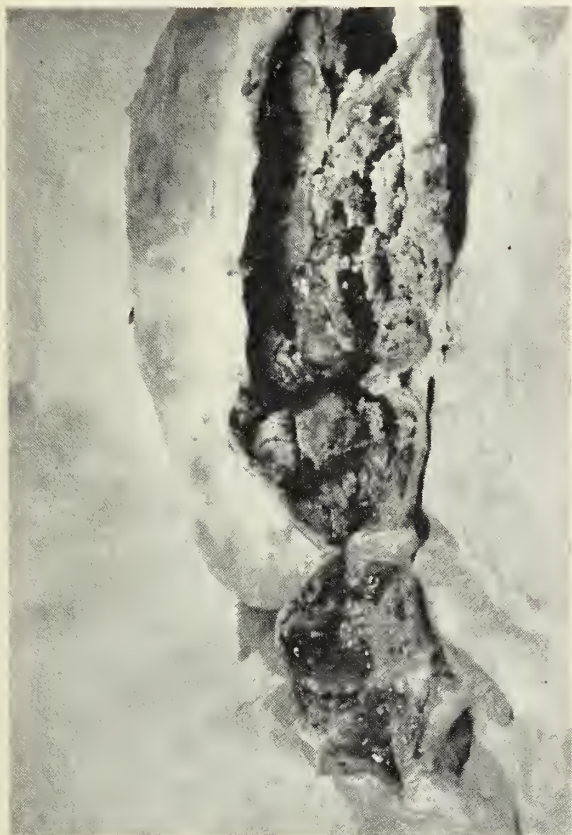


FIG. 7. (Case 4.)

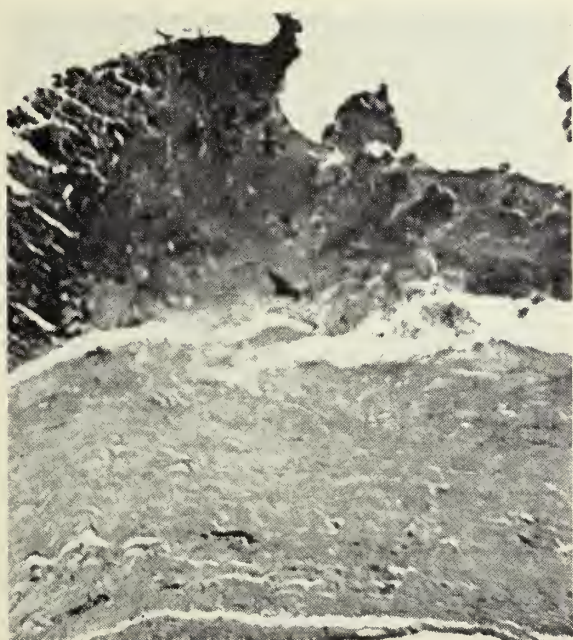


FIG. 8. (Case 4.)

iciency. It will take several years to assess the percentage of late failures in those individuals who are considered an immediate surgical success.

### Summary

The diagnosis of occlusive disease of the peripheral arteries can usually be suspected by a careful history and confirmed by a simple physical examination without the use of complicated apparatus. The importance of early diagnosis and management of acute arterial occlusions is emphasized since delayed or inadequate treatment may result in loss of an extremity. If the arterial occlusion is high and marked peripheral ischemia persists after prompt and adequate medical treatment, embolectomy is indicated. The patients who develop peripheral embolism commonly have serious underlying cardiovascular disease; therefore, appropriate medical therapy should be instituted immediately and follow-up treatment, usually including anticoagulants, is necessary to prevent subsequent thrombo-embolic episodes. The fibrinolytic agents which are presently available are of questionable value in acute arterial occlusions.

Arteriosclerosis obliterans (atherosclerosis) accounts for the majority of the cases of chronic occlusive disease seen in clinical practice and can usually be differentiated from thromboangiitis obliterans (Buerger's disease) on a clinical basis. The management of chronic benign occlusive disease of the peripheral artery continues to be primarily a medical problem despite the advancements in surgical treatment during recent years. Ideally, treatment should include measures to prevent progression or recurrence of primary etiologic factor, that is, the atherosclerotic process. Unfortunately there are many external influences and internal derangements involved in the complex and still unsolved problem of atherogenesis. Therefore, at best an attempt is made to favorably influence those factors which appear to be beneficial on the basis of our present knowledge. The surveys and epidemiologic studies in different populations of the world seem to show a relationship between the percentage of total calories derived from dietary fat, the plasma cholesterol levels, and the incidence of atherosclerosis but there is still uncertainty regarding the exact role of dietary fat in the production of atherosclerosis. Nevertheless, pending more longterm comprehensive information, it appears desirable to restrict fat, and



more particularly the hydrogenated fats, which are mainly those of animal origin, in individuals with high serum lipids. Other metabolic disturbances, perhaps involving proteins, may be important in athrogenesis.

The several drugs which have been advocated to lower the serum cholesterol are discussed. Triparanol (Mer-29\*), an inhibitor of cholesterol biosynthesis will usually reduce the serum cholesterol. But will this drug slow up or prevent the occurrence of atherosclerosis since everyone seems to agree that cholesterol is not necessarily the primary agent involved in athrogenesis?

The present methods used for vasodilatation, including some of the medications advocated for arteriolar dilatation, are discussed. The natural history of atherosclerosis is characterized by a tendency for the collateral circulation to gradually increase and compensate to some degree between episodes of the occlusive process, therefore, a particular type of treatment may get undeserved credit. Most of the preparations promoted as being useful in the treatment of peripheral vascular diseases will dilate normal blood vessels; however, their effectiveness is limited in patients with very ischemic extremities due to severe occlusive arterial disease.

The author's clinical experience with the use of cyclandelate as a peripheral vasodilator is discussed. The initial clinical observations with this drug suggested that it improved the intermittent claudication syndrome; therefore, a specific effort was made to get further objective evidence of its value. After carrying out a double blind study on selected cases with typical intermittent claudication syndrome for a period of one year, it was decided that the regular walking exercise to tolerance probably accounted for the apparent improvement in these patients. Several patients with gangrenous ulcers who were treated with cyclandelate were improved or healed, suggesting a beneficial effect, though there are many other variables involved in the treatment of ischemic ulcers. It is our impression that this drug may be a helpful adjunct in the management of peripheral vascular

disease. There are few side effects associated with the use of this drug.

The mechanical devices which have been devised to improve the circulation to the extremities, are of questionable value. Tobacco in any form appears to be harmful in occlusive arterial disease. Sympathectomy is often helpful in the treatment of ischemic extremities due to occlusive arterial disease and may guard against ulceration and gangrene. Thrombo-endarterectomy and/or bypass procedures with grafts are indicated in selected patients, especially those with segmental occlusions of the larger arteries. Arteriograms are extremely helpful not only to localize the occlusion but to demonstrate collateral circulation and refilling of the distal arteries. Some of the enthusiastic reports on the surgical treatment of occlusive disease of the peripheral arteries are encouraging; however, at this time it is difficult to assess the percentage of late failures in those individuals who are considered an immediate surgical success.

The best treatment of ulceration and gangrene is prevention. The attending physician is obligated to instruct the patient with arteriosclerosis obliterans in the proper care and protection of ischemic limbs. The various conservative measures used in the treatment of ulceration and gangrene are discussed and if these principles are observed by the attending physician many amputations can be prevented or at least delayed, thus preserving a functional limb for a very grateful patient.

### References

1. Allen, Edgar V., Barker, Nelson, Hines, Edgar A., Jr.: *Peripheral Vascular Diseases*. 2nd Ed. Philadelphia, W. B. Saunders Co., 1955.
2. Learmonth, J. R.: *Arteriography of Peripheral Vessels: Technical Details*, *Lancet*. 2:745, 1944.
3. Symposium: Clinical Effects of Fibrinolytic Activity, *Angiology*. 10:244, 1959.
4. Goldsmith, Grace A.: Highlights on the Cholesterol-Fats, Diets and Atherosclerosis Problem, *J.A.M.A.* 176:783, 1961.
5. Hines, Edgar A., Jr.: The Effects of Tobacco on Blood Pressure and in Peripheral Vascular Disease, Symposium on the Physiologic and Pathologic Aspects of Smoking, *Proc. Staff Meet. Mayo Clin.* 35:337, 1960.
6. Lande, K. E. and Sperry, W. M.: Human Atherosclerosis in Relation to the Cholesterol Content of the Blood Serum, *Arch. Path.* 22:301, 1936.

\*See footnote regarding hazards of the drug on page 318, August number of the *J. Tennessee M. J.*

7. Keys, A. and Anderson, J. T.: The Relationship of the Diet to the Development of Atherosclerosis in Man, Symposium on Atherosclerosis. Publication No. 338, p. 181. Washington, D. C.: National Academy of Sciences—National Research Council, 1954.
8. Keys, A.: Diet and Epidemiology of Coronary Heart Disease, *J.A.M.A.* 164:1912, 1957.
9. Editorial: Diet and Stress in Vascular Disease, *J.A.M.A.* 176:134, 1961.
10. Shipley, R. E.: The Effects of Sitosterol Ingestion on Serum Cholesterol Concentration, Symposium on Sitosterol, Tr. New York Acad. Sc. Ser. II, 18:111, 1955.
11. Parsons, Wm. B., Jr. and Flinn, John H.: Reduction in Elevated Blood Cholesterol Levels by Large Doses of Nicotinic Acid, *J.A.M.A.* 165: 234, 1957.
12. Eiber, Harold B.: Quantitative Studies on the Clearing Effect of Heparin, *J.A.M.A.* 176:871, 1961.
13. Proceedings of the Conference on Mer-29 (Triparanol). *Prog. in Cardiovas. Dis.* 2:485, 1960.
14. Achor, Richard W. P., Winkelmann, Richard K. and Perry, Harold O.: Cutaneous Side Effects from Use of Triparanol (Mer-29): Preliminary Data on Ichthyosis and Loss of Hair, *Proc. Staff Meet. Mayo Clin.* 36:217, 1961.
15. Funcke, A. B. H.: Thesis, University of Amsterdam. 1952.
16. DeBakey, M. E., Creech, Oscar and Woodhall, J. P.: Evaluation of Sympathectomy in Arteriosclerotic Peripheral Vascular Disease, *J.A.M.A.* 144:1227, 1950.
17. Crawford, E. S. and DeBakey, M. E.: The Bypass Operation in the Treatment of the Arteriosclerotic Occlusive Disease of the Lower Extremities, *Surg. Gynec. & Obst.* 101:529, 1955.
18. de Takats, G.: *Vascular Surgery*. Philadelphia, W. B. Saunders Co., 1959.
19. Estes, J. E., Jr.: Abdominal Aortic Aneurysm: A Study of One Hundred and Two Cases, *Circulation.* 2:258, 1950.
20. Estes, E. and Massarelli, J.: Aorto-iliac Disease, A Study of 105 Patients, *Ann. Int. Med.* 47: 1125, 1957.
21. Spaulding, L. B.: Prognosis of Patients with Intermittent Claudication, *Canad. M. J.* 75:105, 1956.



## STAFF CONFERENCE

### Memorial Research Center and Hospital\* Pheochromocytoma

DR. ROBERT NEWMAN: The case for presentation today is a most interesting and instructive one of pheochromocytoma exhibiting profound vasomotor symptoms. One might wonder why a case of his type is presented in a Thoracic Surgical Conference but, in this instance, the reasons are two-fold; first, the patient was in the East Tennessee Tuberculosis Hospital with the diagnosis of tuberculosis of rather long standing and a positive sputum, and, secondly, the thoracic approach was used as a means of surgical extirpation of this very large tumor.

The case history will be presented by Dr. George Tarasidis, Thoracic Surgical Resident.

DR. GEORGE TARASIDIS: Present Illness: This patient is a 63 year old white woman admitted to the hospital on December 8, 1961 with the chief complaint of vomiting associated with back pain of 3 weeks' duration. She stated that she had been vomiting off and on since 1946 when she had a gallbladder operation, but it never had been as severe as at the present time. It was thought that the vomiting was due to PAS (paraminosalicylic acid) which she was taking because of tuberculosis.

The tuberculosis began in 1950 when she was in Florida and was diagnosed at that time. The patient was brought here to Beverly Hills Sanatorium and was treated with streptomycin and PAS for 7 months. In the winter of 1960 she had a viral infection and received 13 injections, type of drug unknown. Since then, she had not felt well and had had shortness of breath which required pillows with the head of the bed elevated. She had chest x-ray studies at the health department and was told that her tuberculosis was active again. Hospitalization was recommended and was refused. Because she had a positive sputum in July and August of 1961, she visited a private physician who placed her on INH (isoniazid) and PAS. At this time, when she was placed on PAS, she started vomiting more persistently and profusely.

Past History: This revealed that in 1932 she had a hysterectomy for trauma. In 1946 she had a cholecystectomy and was told that her gallbladder did not contain stones. At that time she had

vomiting and epigastric pain. In 1950, she had a hemorrhoidectomy and at that time was first told that her blood pressure was high. Her blood pressure subsequently came down to normal.

Family History: The mother died of tuberculosis at the age of 64. The father died of generalized arteriosclerosis at the age of 75.

Social History: She does not smoke and does not drink. She is a laundry worker.

Physical Examination: The patient was a well developed, poorly nourished, white woman in no real distress, perspiring profusely with cold extremities. The B.P. was 74 systolic with a pulse rate of 100. Head and neck were negative except for questionable enlargement of the neck veins. Auscultation of the lungs revealed many moist rales in both bases. There was a loud, systolic murmur over the mitral area and the heart appeared to be enlarged to the left side. The aortic second sound was loud. The point of maximal impulse was between the 6th and 7th intercostal spaces near the anterior axillary line. The abdomen revealed two well healed incisions in the midline, above and below the umbilicus. There was some tenderness in the right upper quadrant and in the epigastrium. In the left side of the upper abdomen, there were palpated two distinct masses; one was anterior, freely movable and the other was posterior, much larger and more fixed. The size of the posterior mass was a little larger than an infant's head. It was thought to be an enlarged spleen, a tumor of the bowel or a mass in the left kidney.

The diagnoses on admission were (1) probable pulmonary tuberculosis, (2) early heart failure, (3) abdominal tumor of unknown cause.

Laboratory Studies: The PCV was 33, Hgb was 12. Gm., and WBC 9,800 with 48% neutrophils, 5% eos., 8% monos, 29% lymphs, and 10% bands. The urinalysis was negative. The blood sugar was 155 mg, BUN. 22.6 mg and NPN. 55 mg per cent. The serum amylase was 302 units. The chlorides were very low, 79.8 sodium was 143 and potassium was 5.3 mEq. Her icteric index was 6.9 with a serum bilirubin of .87 mg. per cent. The cephalin flocculation in 24 hours was negative; in 48 hours, was positive. Alkaline phosphatase was 4 Bodansky units.

Course in Hospital: She was placed on intravenous fluids and was digitalized. Early in the hospitalization it was noticed that sudden movements in the bed precipitated vomiting associated with a rebound elevation of the B.P. up to 240 mm. systolic. This rise was transient and the pressure promptly fell to 70 mm. systolic. At this time, a pheochromocytoma was first suspected and a catechol amine determination on a 24-hour urine specimen was ordered.

A plain abdominal x-ray film showed a large mass located in the left upper quadrant of the abdomen with some calcification in the medial wall of the mass. A barium enema was done but was not diagnostic. A gastrointestinal series showed displacement of the stomach anteriorly and to the right. An intravenous pyelogram

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showed depression and displacement of the left kidney. During the x-ray examinations when the patient was moved on the x-ray table, she developed "goose pimples" of the skin with associated headache, became pale and exhibited marked angiospasm, especially of the arterioles, with obvious discoloration of the fingers. Surprisingly enough, the fingers, especially on the right, were discolored like in a Raynaud's phenomenon. A Regitine (phentolamine HCl) test was not done because the elevated blood pressure was always of short duration. Most of the time the B.P. ranged between 70 and 80 mm. systolic.

A cardiac consultation was obtained and the impression of the consultant was that the patient had mitral insufficiency. He felt there was no definite evidence of heart failure and he thought that the patient did not have a pheochromocytoma. He suggested blood cultures, L.E. cell studies and measurement of serum proteins. Blood cultures were performed and were normal. The serum amylase values were followed very closely and serial values were 302, 280, 275, 438, 422, and 300 units. Meanwhile, urine catechol amines were elevated and a second specimen was requested. The second analysis revealed there were 2,000 units of norepinephrine and 1,000 units of epinephrine in a 24-hour urine specimen. A diagnosis of pheochromocytoma and probably chronic pancreatitis was made and exploration was recommended.

On Jan. 4, 1962, under general anesthesia, a left thoraco-abdominal incision was made and a large-tumor arising from the left adrenal gland was removed without difficulty. The tumor weighed 3 pounds immediately after removal. During operation the patient had a cutdown in her arms for the possible use of Regitine or norepinephrine. During the operation, at the time the tumor was manipulated, the B.P. was markedly elevated and required an ampule of Regitine to reduce it to normal. At the end of the operation, after the tumor was removed, the blood pressure was not obtainable and a drip of Levophed (levarterenol bitartrate) was started and was continued postoperatively. Gastric suction was used and intravenous fluids were given up to 3,000 ml. Every 1,000 ml. contained 20 ml. Levophed and 2 ml. epinephrine. This amount was gradually decreased, and by the 4th postoperative day, her B.P. was maintained between 70 to 80 mm. systolic without vasopressor drugs. Fluids were started by mouth, progressing gradually to a regular diet. The serum amylase values were followed daily postoperatively and were as follows: 295, 125, 88.2, 153, 239, 219.3 units. The serum electrolytes postoperatively were normal. At the present time, 2 weeks postoperatively, she maintains her B.P. between 70 and 80 mm. systolic. She feels very well except that she has a poor appetite and a mild degree of elevated temperature.

Postoperatively, she required bronchoscopy for retained secretions and she tolerated this very well. We recently performed a stool examination for undigested food and found that the stools con-

tained neutrophils, acid fat and starch. There was no undigested animal protein in the stool.

DR. NEWMAN: We are very fortunate in having Dr. McChesney Goodall with us this morning. Dr. Goodall's laboratory did the bioassay on this woman's catechol amine urinary output, and I call on Dr. Goodall now to say a few words about the procedures which he employed in really clinching the diagnosis in this particular patient.

DR. MCCHESENEY GOODALL: Since Smithwick's classical paper on pheochromocytoma, which appeared about 1950, there has been much progress in regard to the diagnosis of these particular types of tumors. As you know, until about 1950 these diagnoses were made largely on x-ray evidence. Subsequently, various tests came into vogue, one being the provocative test in which histamine is injected. These latter tests (the provocative tests) are quite dangerous; one can kill a patient and some have been killed. The tests also may give false positive and false negative results. Then, largely through the work of Grimson, came the blocking tests. These were the tests which made use of various sympathetic blocking agents, i.e., Regitine, benzodioxane, etc. These tests are not dangerous but, on the other hand, they are not only expensive but troublesome because the results may be inconclusive. At present, largely through the work of von Euler and Goldenberg, a definite test for the diagnosis of these tumors has been developed; that is to say, the urinary analysis for the hormones released by the pheochromocytoma, namely epinephrine and norepinephrine. There are three types of pheochromocytoma; one is the norepinephrine-producing tumor and this tumor can be found in all parts of the body in which the sympathetic nervous system is found. Although norepinephrine-producing tumors may be found in most parts of the body the most common places are the adrenal medulla and at the bifurcation of the aorta. The second type of tumor is the epinephrine-norepinephrine-producing tumor which is always restricted to the adrenal gland itself. The third type is a pure epinephrine-producing tumor which is indeed very, very rare. I have never seen one but understand from von Euler that there was one reported in Germany and one



reported in Denmark.

Now, in terms of the test itself, we test a 24-hour urine from these patients and proceed in one of two ways. We use a screening technic using the fluorometric method and then follow that with the bioassay. A number of laboratories use the fluorometric method alone, but the fluorometric method is not really truly reliable because it measures anything in the urine that is fluorometrically active, and there are many known and unknown compounds related to both epinephrine and norepinephrine which are fluorometrically active. This means that one can have a urine which may give a false positive diagnosis of pheochromocytoma. On the other hand, if one follows the fluorometric assay with a bioassay, the diagnosis is not missed. As far as I know, we have never missed one. We are finding pheochromocytomas in about 2.2% of all hypertensive patients. As you know, Smithwick thought, and most textbooks report, that the incidence rate is about 0.5%; I think that figure is no longer acceptable and the true incidence is more nearly around 2.2 per cent.

I would like to say just a word about the sympathoadrenal medullary hormones. The two hormones, epinephrine and norepinephrine, structurally are very closely related; epinephrine is nothing more than N-methylated norepinephrine. The amazing fact is that the action of these hormones, epinephrine and norepinephrine, is astoundingly different because of this methyl group. The norepinephrine acts chiefly on the vascular bed producing vasoconstriction while epinephrine has rather dramatic and profound effects on both the cardiovascular system and on metabolism.

DR. NEWMAN: The pathologic lesion in this specimen was rather remarkable; however, it was not the largest tumor that has been recorded in the literature. The largest one I find described was about 2,000 Gm. but this certainly was a very large tumor.

Dr. Francis S. Jones will now show us what we took out.

DR. FRANCIS S. JONES: The tumor weighed 1,330 grams which is the largest pheochromocytoma that we have had. It was nearly twice as large as the next larg-

est tumor. As you can see, it is well encapsulated and a small amount of retroperitoneal connective tissue is adherent to the outer surface. When cut, we found that the tumor had a very large area of necrosis. This whole area on the left side was necrotic, friable and mushy. When we had cut it, we reweighed the tumor and found that it weighed only 1,040 grams, so 290 grams of bloody fluid, probably mostly blood, was lost when it was cut. The viable tumor that we see is tremendously vascular with cystic spaces evident in many areas lined by endothelium. The tumor seems to be lobulated. In the most cellular areas, the color was a vague meaty, pinkish-red color. In many areas, this is actually honeycombed with vascular channels. In several places along the capsule, we felt quite sure that there were small remnants of the adrenal gland. There was, however, no normal cortex left; microscopically, a few small clusters of adrenal cortical cells were still evident along the outer margins of the tumor.

DR. NEWMAN: What percentage of these tumors show malignant change, Dr. Jones? One of the questions that arose when we first started working up this patient, "Was this a malignant tumor?" And after we found out that it was a pheochromocytoma, one of the questions was, "Is it a malignant pheochromocytoma?"

DR. JONES: A few malignant pheochromocytomas have been reported in the literature but I have never studied one. Perhaps this is a reason why I am skeptical of the existence of functioning malignant pheochromocytomas. Vascular invasion is sometimes seen in pheochromocytomas but it is not a sign of malignancy.

DR. NEWMAN: As it has been pointed out, one of the problems in the management of the patient being operated on for a functioning tumor such as this concerns itself with the operative and anesthetic management. Dr. James Downs was the anesthesiologist in this case and he is present today and will tell us about the special problems that were encountered in the management of this particular patient.

DR. JAMES E. DOWNS: I would like to limit my remarks to the practical aspect of the management of this problem. The anesthetic problems associated with the

management of a patient with a pheochromocytoma are related chiefly to the tumor's production of epinephrine and norepinephrine.

In general, all the anesthesia for a given case is a clinical trituration of basic principles as related to a specific patient. On the basis of this, it would seem warranted to make the following statements:

(1) One must have infallible access to a venous channel because this is absolutely necessary to carry the patient through the operative procedure and immediate post-operative procedure.

(2) Endotracheal intubation, mechanical ventilation and electronic monitoring of pulse and/or heart beat are factors which free the anesthesiologist from the specific parts so that he may view the whole situation. The implication here is that the anesthesiologist must be constantly aware of the whole endeavor and, therefore, he must avail himself of every aid, even if it has minor inherent defects—and I stress the word "minor."

(3) The pharmacologic incompatibilities are pretty well documented and I will not go into them here. The selection of agents certainly should be such that one does not encounter the well-known incompatibility of cyclopropane with epinephrine and norepinephrine.

(4) In this case, we had extra help from Dr. Goodall in that we knew what isolation of this tumor's output from the system circulation would mean. Yet, I would like to point out that if each case represents a clinical trituration of basic principles related to the specific patient, such determinations are not absolutely necessary. In all probability, this sort of assay is unavailable to the majority of people elsewhere.

The only other two comments I would like to make are that during the operative management, the hypertensive crisis, in my opinion, is much less dangerous than the hypotensive episode and, although people stress the importance of adequate oxygenization, I think that adequate removal of carbon dioxide is much more important than hyperoxygenization. This patient, during operation, exhibited the typical up-and-down blood pressure chart. I was fooled in that I was ready for the drop in pressure

when the tumor was isolated, but the solution I had mixed up was not concentrated enough. For three or four minutes we had a period where no blood pressure could be obtained clinically. The corrective solution was in the range that Dr. Goodall had predicted.

DR. NEWMAN: As was mentioned in the beginning, this patient had the diagnosis of pulmonary tuberculosis and a positive sputum which would indicate that she had active tuberculosis. Dr. P. M. Huggin is here with us today and will talk to us about the relationship between metabolic disorders and pulmonary tuberculosis as pertains to the progress of the patient under treatment.

DR. P. M. HUGGIN: I think this case very definitely demonstrates that the old adage "you cannot have two diseases at the same time" is not correct. This patient has had tuberculosis for a number of years, we know for at least ten years. Her treatment has been adequate, and with the amount of disease she had to start with she should have been inactive from her tuberculosis several years ago; however, she had a positive sputum in August 1961 and there has been very little change in the x-ray appearance of her chest within the past ten years. There were a series of events which led up to our suspecting that something else was wrong with the patient other than tuberculosis. Her symptoms were much more severe than one would expect with this amount of tuberculosis. She was acutely ill on admission, being extremely nauseated, so much so that for the first week she retained practically nothing by mouth and we had to keep her fluid balance up with intravenous fluids.

At the time of her physical examination, which was done by Dr. Milbrey Hinrichs of the East Tennessee Tuberculosis Hospital, it was noted that her systolic blood pressure suddenly went up to 240 mm of mercury. Just as suddenly it came down to 80 mm of mercury. Due to her gastrointestinal complaints, a GI. series was ordered and as a preliminary study, a plain film of the abdomen was made. This showed the large tumor mass in the left flank. Subsequently, the diagnosis was proven to be pheochromocytoma and pulmonary tuberculosis.



The interesting part to us about this case is the influence this tumor has had upon her tuberculosis. We all know that metabolic diseases do influence the prognosis in tuberculosis. This is especially true in diabetes and patients receiving corticosteroids. It is very difficult to control tuberculosis infections in individuals who have been on long-term corticosteroid therapy. It has been noted also that thyroid function seems to affect tuberculosis. Patients with hyperthyroidism seem to have an increase in their resistance to the disease, whereas hypothyroidism decreases their resistance. Just what effect this type of tumor has on tuberculosis we are unable to say but we do observe that this patient has been treated for some ten years and her disease is still active. We are inclined to think from this that it probably has had a bad effect upon the disease.

We are going to watch this case with a great deal of interest to see how her tuberculosis does now that she has had this tumor removed. We think that she should do better. She has not responded too well at this time. She is still lethargic, hypotensive and has a poor appetite. We are possibly a little overly anxious to see some dramatic results and we certainly hope to see her improve in the near future.

DR. NEWMAN: Dr. Goodall, as a matter of interest, in your experience, how long does it take the opposite adrenal to resume normal function?

DR. GOODALL: This varies. Apparently it has not yet resumed normal function in this individual. The opposite adrenal is presumably functioning but at a depressed rate because of the increased medullary activity of the pheochromocytoma. As soon as the pheochromocytoma is resected, the normal adrenal medulla will take over but the rate at which it will resume its normal function varies from patient to patient; it can be a matter of hours or a matter of three to four weeks. In this particular patient the normal adrenal medullary activity has not yet resumed its total normal function but

should sometime in the very near future.

DR. JONES: Dr. Newman, because of the occurrence in a small but significant number of cases of multiple pheochromocytomas, would you comment on the exploration of the abdomen through this incision used for a transthoracic approach?

DR. NEWMAN: This approach that we described started out as a thoracic incision. It started out as an intercostal incision in the left 7th interspace and then transdiaphragmatically, we explored this tumor. As it has been pointed out, this was a very large tumor and we found it impossible to deliver it through the diaphragm; thus, the incision was enlarged and became a thoraco-abdominal one which gave us access to a good abdominal exploration. The opposite adrenal was explored and was felt to be normal. No other intra-abdominal masses were felt that would suggest that there would be another functioning tumor of this sort, so this particular incision did give us access to a good abdominal exploration.

We carried out these various manipulations, looking for other sympathomimetic tumors and none were found. I think we found enough in this one tumor to cause all of her symptoms and apparently, she now is not having hypertensive episodes. Actually, it would be a little bit better if she had a little bit more functioning adrenal tissue.

DR. NEWMAN: I should like to thank all of you for participating in this most enlightening and instructive discussion of the diagnosis and treatment of this most interesting neoplasm. The problems in the management of a patient of this type have been well demonstrated but, also, in a neoplasm such as this, the end result is certainly rewarding inasmuch as this is the type of patient whom one can cure. Her future progress, of course, will be watched very closely but I would think that her tuberculosis, as Dr. Huggin pointed out, will be more amenable to treatment now and her general condition will gradually improve as her other adrenal gland takes over the function.

## CLINICOPATHOLOGIC CONFERENCE

### Vanderbilt University Hospital\* Primary (or idiopathic) Pulmonary Hemosiderosis With Advanced Interstitial Fibrosis

This was a 2 year 10 month old white girl admitted 7 times to the Pediatric Service.

*First Admission:* Age 1 year 6 months.

*F. H.:* Unremarkable except for 2 cousins having hay fever and asthma.

*P. H.:* Unremarkable—diet was adequate.

*Present Illness:* The patient was well until 8 months before admission when she was noted to have recurrent episodes of pallor, moderately severe diarrhea, and vomiting. The parents thought she had been yellow at times. Two days before admission she vomited frequently and became dyspneic.

*Physical Examination:* T. 99, P. 145, R. 95. She was an irritable, tachypneic, slightly pale and icteric child. There was no adenopathy. The heart and lungs were normal. The liver was palpable 2 fingerbreadths below the right costal margin; the spleen was not felt. There was no abdominal masses.

*Laboratory Studies:* Urine was negative. Hgb. was 1.8 Gm., WBC. count 19,550 with a differential count of 14% juv., 46% segs., 31% lymph; RBC. morphology revealed poikilocytosis, anisocytosis, hypochromia; reticulocytes of 0.4%; platelets 900,000. The O.T. was negative. Nasopharyngeal culture showed pneumococci. Chest x-ray revealed consolidation in the right upper lobe and scattered infiltrate in all lung fields.

*Course:* The patient was treated with oxygen and sulfonamides. She developed physical signs of pneumonia in the right upper lobe on the 2nd day. The Hgb. rose to normal following transfusions and the signs of pneumonia resolved slowly. She developed an erythematous rash on her face and extremities, which faded shortly after the sulfonamides was stopped.

*Second Admission:* Age 1 year 8 months. She had become pale. Two weeks before this admission she developed an upper respiratory infection, cough, fever, and dyspnea. There was no history of blood loss.

*Physical Examination:* T. 99.6°. She was pale and slightly icteric. An expiratory grunt was present. There was a faint systolic blow at the apex. The lungs were clear to percussion and auscultation, and the size of the liver was unchanged.

*Laboratory Studies:* Urine was negative. The sickle preparation was negative. The stool showed ascaris ova. RBC. fragility was normal. The O.T. was negative. MCV. was 72, MCH 22,

MCHC 30, Hgb. 4.2 Gm., PCV. 12, reticulocytes 1.9%, WBC. count 24,150 with 5% juv., 53% segs., 32% lymph, and an icteric index of 9.

*Course:* She was treated with blood, iron, liver extract intramuscularly and hexylresocinol. The reticulocyte count rose to 16.1 on Jan. 27 and the icteric index fell. She improved slowly and was discharged on iron and vitamins with a Hgb. of 11.5 Gm. and reticulocytes of 0.5%.

*Third Admission:* Age 1 year 9 months. Four days after discharge from the hospital, she was readmitted with a one day history of fever, cough, tachypnea, and grunting respirations. Abnormal physical findings included a T. 103.6°, pallor, dyspnea, tachypnea, cyanosis, bilateral tubular breath sounds and decreased resonance over left chest.

*Laboratory Studies:* Hgb. was 7.8 Gm., WBC count 22,800 with 74% segs., 21% lymphs, reticulocytes of 2.9% and icteric index of 12. Chest x-ray showed consolidation in both lung bases and increased vascular markings bilaterally. The urine was negative. Blood culture was sterile. Nasopharyngeal culture showed pneumococci. Malaria preparation was negative; febrile agglutinins was negative; the van den Bergh indirect reaction was moderate, with no direct reaction.

*Course:* She was treated with sulfonamids and liver extract intramuscularly and improved. She was afebrile and a chest film showed clearing after 5 days. Reticulocytes count rose to 7.2% and the Hgb. increased slowly to 10.5 Gm.; reticulocytes were 0.4 at time of discharge. She was discharged on oral iron therapy.

*Fourth Admission:* Age 2 years. She was admitted because of a similar episode of a sudden onset of upper respiratory infection, dyspnea and fever.

*Physical Examination:* T. was 99.4°. She was tachypneic and pale. The chest and heart were normal. The liver was the same size as before and the splenic tip was palpable. Laboratory studies revealed a normal urine, a Hgb. of 9 Gm., WBC count of 11,000 with 2 juv., 45 seg., 51 lymph., and reticulocytes of 11.8%; icteric index was 15, van den Bergh, moderate indirect, RBC. fragility 4 times normal. The O.T. was negative on 3 occasions. Throat and nasopharyngeal cultures on 7 occasions showed normal flora. The sickle preparation was negative. Gastric washings and nasal smear revealed no eosinophiles. The stool showed giardia lamblia. Cold agglutinins were negative. The vomitus was guaiac positive. The urine was negative for urobilinogen. Chest x-ray showed extensive fibrosis and exudation and probably consolidation. She had no significant skin reaction to the common inhalant antigens. The Hgb., reticulocytes and icteric index slowly returned toward normal without specific therapy.

An autogenous vaccine was made from the upper respiratory tract flora. Five days after first injection of this vaccine her Hgb. fell to 9.6, reticulocytes were 11.8 and icteric index rose to 12, though the chest x-ray remained similar to

\*From the Departments of Pediatrics and Pathology, Vanderbilt University Hospital, Nashville, Tennessee.



that on admission. The blood picture slowly returned toward normal again. She received another injection of this vaccine and the process described above recurred. Following recovery from this last episode she was discharged in relatively good condition, with a normal hemoglobin and reticulocyte count. The chest film showing general haziness and exudation.

*Fifth Admission:* Age 2 years 5 months.

*Sixth Admission:* Age 2 years 9 months.

She was admitted with 2 episodes quite similar to those described on previous admissions. Bone marrow aspiration was interpreted as showing erythroid hyperplasia.

*Seventh Admission:* Age 2 years 10 months.

She was admitted 2 days after the last admission because of another episode of respiratory distress. Physical examination, hemoglobin and chest x-ray were similar to those recorded previously. Her respiratory distress persisted and, despite oxygen, sulfonamids, blood and epinephrine therapy, she steadily became worse and expired.

DR. RANDOLPH BATSON: This is a most remarkable and unusual case history. This child, admitted to the hospital for the first time at 1½ years of age, lived for 16 months during which time she had seven hospital admissions. During each of these admissions essentially the same pattern was repeated except for the fact that the acute episodes increased in severity. All were characterized by the sudden onset of pallor, anemia and dyspnea. Despite the sudden onset and severity of these episodes it was impressive that she did recover quite rapidly on several occasions. During the course of her illness she had the following signs and symptoms. Pallor, diarrhea, vomiting, fever, evidence of respiratory disease, cough, expiratory grunt, jaundice, cyanosis, irritability, dyspnea, systolic cardiac murmur, hematemesis and possibly some enlargement of her liver and spleen. Also during these admissions laboratory studies revealed hypochromic anemia, reticulocytosis, pulmonary infiltration, leukocytosis, fever, and increased icterus indices.

In considering the possible diagnoses one must certainly mention pneumonia since she did have recurrent extensive pulmonary infiltration. I do not know of a viral or bacterial agent that can produce a disease so sudden in onset and be associated with the other manifestations of this clinical syndrome. Löffler's syndrome, sometimes referred to as "eosinophilic pneumonia" is a disease characterized by widespread pul-

monary infiltration, blood eosinophilia of 40 to 70%, cough and dyspnea, with little or no fever. Biopsy sections of the liver of such persons have revealed multiple focal areas of necrosis, granuloma formation and eosinophilic infiltration. I seriously doubt that this is a clinical entity and suspect that most if not all such children had infestation with cat or dog ascarids producing the disease we now term toxocariasis or visceral larva migrans. This disease is also associated with extensive pulmonary infiltration, hepatomegaly, and extreme eosinophilia. However, these children do not have so rapid an onset as this child had, nor do they experience periods of remissions and exacerbations. Fibrocystic disease must always be considered in a child who has recurrent pulmonary infiltration, but here again, though these children do have remissions and exacerbations which may be quite sudden in onset, they do not have the other associated findings, particularly profound rapidly progressing anemia.

Idiopathic pulmonary fibrosis, first described by Hamman and Rich is seen in both adults and children and characterized by progressive dyspnea and cyanosis associated with diffuse pulmonary fibrosis. Again, one should not accept this as a possible diagnosis because this process is confined to the lung. This certainly was not so with our patient.

I think that we must come to the conclusion that this child had very severe acute hemolytic process or blood loss and that this can be explained only on the basis of idiopathic pulmonary hemosiderosis. The above case report provides an accurate and concise description of this disease.

These patients, usually between the ages of 1 to 3 years, have the sudden onset of dyspnea, pulmonary infiltration, and anemia with other signs of acute respiratory distress, all of which are precipitated by sudden severe intra-alveolar and interstitial hemorrhage. The disease is usually fatal, death occurring after several remissions and exacerbations. The sex distribution is equal. The average duration of the disease is approximately three years and although the highest incidence is in the 1 to 3 year age group many cases have been reported in adults.<sup>1</sup>

The disease was first reported by Virchow in 1864 when he described "brown induration" in young girls without heart disease. In 1931 a more detailed description was given by Ceelen.<sup>2</sup> Currently approximately 100 case reports have appeared in the literature.

In conclusion, I must say that this case report is such a classic description of idiopathic pulmonary hemosiderosis that I would not entertain any other possible diagnosis.

DR. JOHN L. SHAPIRO: This is an older case which shows the classical changes of pulmonary hemosiderosis of undetermined etiology. At autopsy a terminal dilatation of the right side of the heart was seen, but nothing else to suggest myocardial failure was encountered. The marked pulmonary changes constituted the principal gross finding at autopsy. The lungs tended to maintain their shape and were described as voluminous and firm. (Fig. 1.) Some pleural



FIG. 1.

thickening was evident, but no adhesions were present. The lungs were of uniform striking brown color and took the Prussian blue reaction grossly, indicating the amount of accumulated iron-containing pigment which was present. The histologic changes consisted of accumulations of red cells within alveoli and the presence of tremendous amounts of hemosiderin within macrophages in the alveolar lumens. (Fig. 2.) In

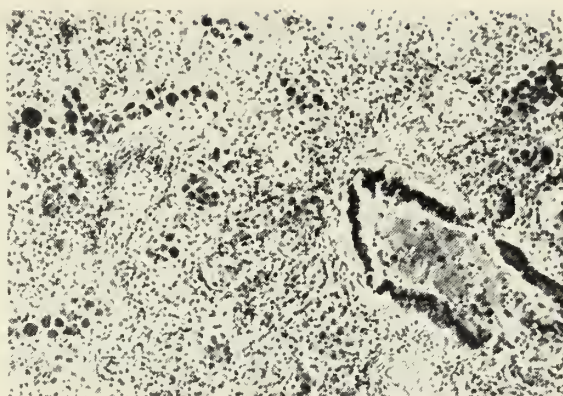


FIG. 2.

addition, interstitial fibrosis was marked and increased prominence of the lining epithelium of the alveoli was noted in many areas. No vascular thickening was evident. In essence, I might say that the changes are those that we see in association with extreme passive congestion and the diapedesis of red cells that occurs in that situation. We must accept intraalveolar hemorrhage as the starting point for the "brown induration of the lung" as first described by Virchow in 1851 in an apparently similar case. It is my opinion that the other changes noted could be entirely secondary to such extravasation of blood into the alveolar lumens. Another feature which I would like to point out in the lung is the presence of numerous lymphoid follicles with proliferating germinal centers. Such may be seen occasionally in the lung, but in the human I would consider this a rarity. The only other site where hemosiderin accumulation was evident was in the hilar lymph nodes which constituted the drainage path of macrophages and lymph from the lung. Elsewhere in the reticuloendothelial system, no pigmentary deposits were noted. I think this is a manifestation of the local nature of the lesion which leads to the condition of primary pulmonary hemosiderosis.

The lymphoid hyperplasia noted in the lung was evident in all of the lymphoid tissues wherever examined. All the lymph nodes showed this picture; lymphoid accumulations were evident on gross examination of the spleen, and the same changes were noted in the intestinal tract and the tonsils; even in the thymus there were proliferating germinal centers of lymphoid tissue. This latter point is of interest in view of the emerging interest in the thymus as



an organ having to do with antibody responses. In addition, there were numerous plasma-type cells noted in the pulmonary interstitial tissue. Taken all together these changes may well be indicative of a generalized antigenic stimulation to the antibody-forming tissues of this child. The bone marrow was hyperplastic with numerous islands of erythroid cells, and it would be my opinion that it was functionally competent.

Little can be added to elucidate the pathogenesis of this remarkable condition from observation of the case at hand. I would tend to favor the hypothesis of a local antigen-antibody response resulting in diapedesis of red cells into the alveolar spaces on the basis of the observations in this case. Other hypotheses which have been put forth over the years have to do with structural abnormalities of the pulmonary capillaries, the possibility of A-V shunts in the lungs with telangiectases and hemorrhage from these structures, and it has been supposed by some that the earliest initial lesion was capillary tortuosity and alveolar epithelial changes, though these seem to me to be most likely secondary.

An incidental finding was the presence of a primary tuberculous complex with healing. No relation of this lesion to the generalized pulmonary disease is apparent.

Question: Are there therapeutic procedures that affect the course of the disease?

Dr. Batson: I have seen only three cases and have been convinced that whole blood

transfusions and oxygen therapy are of temporary benefit during the acute process. Splenectomy and steroid therapy have been used in an attempt to prevent these episodes. I doubt the effectiveness of either of these measures.

Question: Do you have any opinion as to the etiologic factor?

Dr. Batson: Several hypothetical pathogenic mechanisms have been advanced but none proven. Some are of the opinion that an abnormality of lung tissue is the primary lesion, some feel that there is a primary defect of pulmonary elastic fibers, and others assume the formation of auto-antibodies against an unknown sensitizing agent. In fact, it has been described as "hemorrhagic asthma."

#### References

1. Bronson, S. Martin: Idiopathic Pulmonary Hemosiderosis in Adults. Report of a Case and Review of the Literature, *Am. J. Roentgenol.* 83: 260, 1960. (review of occurrence in adults).
2. Ceelen, W.: Die Kreislaufsteuern der Lungen. In: Henke-Lubarsch: *Handbuch der speziellen pathologischen Anatomie und Histologie*, Vol. III/3. Berlin. J. Springer, 1941, p. 20 (first clinical description).
3. Soergel, Konrad H., and Sommers, Sheldon C.: The Characteristic Alveolar Lesion of Idiopathic Pulmonary Hemosiderosis. Abstract in program of meeting of Am. Assoc. Pathologists & Bacteriologists April 27, 1961.
4. Clinical Pathological Conference: *J. Pediat.* 59:616, 1961.
5. Steiner, Bela: Essential Pulmonary Hemosiderosis as an Immuno-Hematological Problem, *Arch. Dis. Child.* 29:391, 1954.

# President's Page



WILLIAM J. SHERIDAN,  
M.D.

Your Board of Trustees recently endorsed a statewide program for mass inoculation of *all* persons against poliomyelitis. In this your President heartily concurs. Our efforts to eradicate this crippling disease should be without limits or bounds. The sponsorship of this endeavor by each county medical society within its respective area is respectfully requested. It is to be emphasized that although the individual societies are urged to voluntarily take the lead, sponsor and implement this immunization program, it will necessarily resolve itself in a combined community project and will require extensive cooperation and participation of many lay persons and groups.

Significant to be noted is the report that the present recommended type of immunizations not only protect the individual but serve to eradicate certain types of carriers as well. This gives added impetus for recommending a statewide program to include all ages. Nominal and minimal fees will be charged to those able to pay—without cost to those unable to do so. All services performed by the physicians and the assisting lay groups are to be rendered without charge.

The requested minimum fee pays only for the materials actually used at designated and convenient centers to be established in the various local communities. Experience gained from completed similar activities reveals that a minimum of 80% of the entire population of the involved area availed themselves of this service.

Such leadership by our profession should serve to demonstrate to the public our sincere interest in its welfare, however the basic intent of this suggested program is not self-aggrandizement but represents a concerted effort on our part to eradicate a widespread and crippling disease.

\* \* \*

Each of the members of the Association was recently sent a brochure of a proposed "Senior Citizens Plan." This plan is in conformity with action taken by your House of Delegates at its April session. It is not a hospitalization plan but is analogous in many respects to the existing surgical fee schedule of our present "Tennessee Plan." To be noted is its application to those 65 years of age and older, and their minor dependents; and the inclusion of surgical, medical, diagnostic, radiological and pathological fees as described in the brochure. This low-cost, broad coverage plan will be made possible only by your acceptance and your willingness to agree to the terms as outlined. Your cooperation is requested. This is but another demonstration on our part of our desire to render adequate medical service to our aged citizens in the low income group. Such efforts may serve to protect them from another "Trojan Horse."

*William J. Sheridan, M.D.*

President



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September, 1962

## EDITORIAL

### INSULIN IN THE HUMAN

The Lilly Award of the American Diabetes Association for 1962 was presented to Harry N. Antoniadis for his "Studies on the State, Transport and Regulation of Insulin in Human Blood." These studies reported over the past six years, suggest one of the ways insulin can be made available when carbohydrate is administered to the human, and also suggest a defect which may be responsible for some cases of diabetes mellitus. His latest paper<sup>1</sup> summarizes his previous work and also contains a long bibliography of the previous related study.

Antoniadis and his associates suggest that insulin exists in the human blood in two forms: a "free" form which represents the biologically active portion of insulin, and a complex form (insulin complex) which represents the biologically inactive form of the hormone. Insulin can be liberated from the complex form, in vitro, by centrifugation at

a high pH or by incubation, at physiologic pH, with adipose tissue extracts.

The ratio of "free" insulin to insulin complexes in blood does not represent a pure physicochemical equilibrium. The ratio depends, instead, on the metabolic state of the individual. When the nondiabetic is fasting, most of the insulin present in the blood is in the insulin complex form which is biologically inactive and very little "free" insulin is present. When blood glucose rises, there is a disappearance of insulin complexes and a rise in "free" insulin. This rise has been attributed to the breakdown of insulin complexes with the liberation of "free" biologically active insulin. Four to five hours after administration of glucose, there is a return to the fasting state with the previous high level of insulin complexes and a low level of "free" insulin. Glucose administration apparently triggers a mechanism which results in the in vivo dissociation of the insulin complex. Such a mechanism may act directly on the insulin complex or through a series of intermediate reactions to dissociate the insulin complex with a resultant increase in "free" biologically active insulin.

Insulin complexes have been detected also in the blood of diabetics, whether on insulin therapy or not. They have been identified even in the blood of insulin resistant diabetics requiring daily injections of more than 1,000 units of commercial crystalline insulin daily. Despite increased fasting glucose levels in the diabetic, dissociation of the insulin complex does not occur. When glucose is administered, the dissociation of the insulin complex with liberation of "free" biologically active insulin proceeds at a much slower rate than in the nondiabetic human. This lack of utilization of the insulin complex in the diabetic implies a malfunction of the mechanism necessary for dissociation. However, this does not necessarily imply that there is a lack of factors which break apart the insulin complex. It may be that the basic trigger mechanism ordinarily activated by an elevated blood glucose, is deficient or there may be a deficiency of an intermediate step in the transmission of the message from the elevated blood glucose to the trigger or from the trigger to the dissociating factor.

These studies suggest that some cases of

diabetes, especially of the adult variety, may be caused by malfunction of the regulatory mechanism of insulin release from insulin complexes. What this means in the future therapy of diabetes remains to be seen. If a method can be found to correct permanently this malfunctioning regulatory mechanism so that "free" insulin can be released from the complexes, certain diabetics will then be able to utilize their own insulin. When this happens, a true cure of diabetes will have been accomplished for the first time.

A. B. S.

#### References

1. Antoniadis, H. N., Gundersen, K., Beigelman, P. M., Pyle, H. N., and Bougas, J. A.: Studies on the State, Transport and Regulation of Insulin in Human Blood, *Diabetes* 11:251, 1962.



#### INTERNATIONAL MEDICINE

Following this comment is Dr. Spray's account of his thoughts and reactions as one of the orthopedic surgeons who has taken a part in the medical profession's contribution to *Medico*.

As a country we have given aid in the medical field in the four corners of the Earth for a half century or more, whether in the study of hookworm, malaria or other disease. These contributions have been under federal auspices, as either the U. S. Public Health Service or the U. S. Army. In recent years our contributions both professional and financial have been in the main through the World Health Organization of the United Nations. The attack on worldwide scourges such as tropical treponematoses, as yaws, and upon malaria, a major cause of death in the tropical and subtropical areas of the world, is already showing the effectiveness of such programs. Other assistance is given through federal funds in research, nutrition and in fostering and supporting an intimate relationship between certain of our medical schools with a counterpart in a distant land, with the idea of supplying faculty and lending support to the teaching program in the foreign medical school. In addition, surely the admission of graduates of foreign medical schools under visas for graduate education in our hospitals can, upon their return to their country, have an important impact upon medical

practice there if they have received proper and adequate instruction here.

In addition to the governmental sponsored programs, there have been many voluntary contributions to medicine in other more primitive civilizations. Thus, medical missionaries and other church sponsored medical activities have for generations left their mark on better medical care around the globe. Philanthropy has had its share in contributions to better medicine whether as Rockefeller money to support a Peking Medical College for many years, aid in the study and eradication of disease in South America, or as the Kellogg Foundation's support of academically minded medical graduates from South America in fellowships to train them for teaching positions upon their return to their native country.

Now has appeared the opportunity for medical men to contribute as individuals. *MEDICO* was established by Dr. Tom Dooley with the purpose of giving aid in person in the medical field to the underdeveloped countries of the world, all on a voluntary basis. As Dr. Spray has indicated, the orthopedists of our country have been the first group to give of their time and money to help others in their chosen field, and their efforts have been most gratefully received. I had the pleasure of meeting three of them in a far land several months ago, and my path crossed where they had worked. I heard of them only in words of praise and appreciation.

There is no question of the contributions these and other medical men make in the training of doctors of foreign lands and in the care of the sick. But thought should also be given to another, intangible but nevertheless most important contribution, namely, if one may use a hackneyed phrase, as "ambassadors of goodwill." We need not be reminded that we are engaged in a cold war. It is being fought with *Lend-Lease*, advisory commissions, technicians on loan, and by financial aid. The recipients know the purposes of all these things—an attempt to orient their country to the West, our way of thinking, and away from the East.

But for a private physician or medical organization to make a contribution—this is something else again, and leaves the recipients of these courtesies and contributions



somewhat surprised and even amazed. These things are appreciated for there are no strings tied to this help,—implied or stated.

Finally, and of great importance is the fact that just as in music and art, science and medicine know no boundaries, and therefore physicians everywhere are brothers under the skin. This is worthy of emphasis since physicians in other lands play a greater role in politics than in our country. Their opinions and thoughts may be very important. They generally come from well to do families, and/or influential ones in the politics of the country. These may be the ones we wish to have on our side. Thus, even though this is not the purpose of the doctor's personal contribution to the medicine of an underdeveloped country, friendship with its doctors may be of an immeasurable kind and not to be discounted.

In any event, as Dr. Spray has said, an experience such as he has had is a satisfying one in contributions to the good of mankind, as well as interesting in seeing new places and new diseases or problems of disease. And finally, to quote a paragraph from another editorial source,—“No longer is the doctor a citizen merely of his town, where he may take an active part in community life, but he should now consider himself, as an educated man, a citizen of the world with interest in, and understanding of the problems of world health and their effect upon world politics. It has been said that ‘famine and disease breed wars’—the truth of this cannot be gainsaid.”<sup>1</sup>

R. H. K.

<sup>1</sup>Editorial. Our Stake in International Health, South M.J. 55:873, 1962.



## Special Item

### Nigerian Orthopedic Project of Medico-Care

Paul Spray, M.D., Oak Ridge, Tenn.

In these days of a world which has been shrunk by modern methods of transportation and communication and by the ideological struggle, the physician feels a responsibility for medical care not only in his own community but in the world as a

whole. MEDICO, the organization started by Dr. Tom Dooley in 1958, has provided a means through which practicing physicians in the United States are able to express their concern, and help to meet the world's medical problems, by going at their own expense to an underdeveloped area and working there with the local physicians for a period of about one month. So far only orthopedic surgeons have participated in the projects. It is hoped that other groups of American physicians will develop projects of their own.

The Orthopedics Overseas division of MEDICO had its first project in Jordan in the Middle East. This project which was started in 1959, and has been described in an article in the *Saturday Evening Post*, is a continuing one. In addition, there are similar programs in Colombia, South America; in Saigon, South Vietnam; and in Nigeria, West Africa.

I had the privilege in participating in the Jordan project and of being the first man to start the project in Nigeria on March 12, 1962.

Nigeria is the largest of the African countries south of the Sahara desert, having a population of 40 million people. It has been independent of Great Britain since 1960 and has a quite stable democratic form of government.

There are three divisions of the Country of Nigeria, all of which are quite autonomous. In each of the Western and Northern divisions of Nigeria there is one small orthopedic center. Prior to our project, the Eastern division, with a population of ten million people, had no orthopedic services at all. The headquarters of the Nigerian Orthopedic Project was at the capitol of Eastern Nigeria, Enugu, a city of about 90,000 population. There is a government-run hospital in Enugu of 200 beds, and it was the one in which we did most of our work. We also worked at the leprosy hospital on the Oji River thirty miles away and in the joint mission and government hospital at Umuahia one hundred miles distant. The missionary hospital at Iyi Enu, near the banks of the Niger River, was visited and it is expected that we will also be able to be of some help to this hospital in the future.

Ground work for this program was laid by Dr. John Golding, a British orthopedic surgeon whose home is in Jamaica. Dr. Golding had been at Ibadan, Nigeria at the University College Hospital doing orthopedic surgery on a Fellowship from the Nuffield Foundation. The man in charge of the Nigeria Project is Dr. Charles U. Hauser, of Hamilton, Ohio. In overall charge of Orthopedics Overseas is Dr. Allen M. McKelvie, of Washington, D.C. There is a continuing roster of orthopedic surgeons scheduled for the rest of 1962 and into 1963. How long the project continues depends on the interest of the orthopedic surgeons in this Country in donating their services and expenses. I was replaced at the end of five weeks by Dr. Richard K. White of Allentown, Pennsylvania, to be followed by others.

The purpose of our program is to give a sort of "on-the-job" training in orthopedics to the local doctors who have need to treat the orthopedic problems. In the absence of trained orthopedic surgeons, it is thought that just some practical suggestions about how to deal with the day-to-day problems which are present should be of great value. It is also hoped that by encouraging an interest in orthopedics some of the local physicians will be stimulated to obtain complete formal training as orthopedic facilities are improved and developed. Dr. Jacob Igwe, a Nigerian physician with no special training in surgery, was assigned by the government to work with us and to be in charge of the orthopedic patients at Enugu. Dr. Igwe seemed quite interested in orthopedic surgery and seemed to have a good deal of aptitude, and I am hopeful that he will continue to develop his interest and training in the field.

In addition to sharing some of our experience and training with the local physicians, the Nigerian orthopedic project offers an opportunity to get acquainted with conditions not ordinarily seen in orthopedic practice in the United States. In helping to do operations on leprosy patients at Oji River, I discovered that some of the procedures which are helpful are those which we use for paralytic deformities of other kinds at home. These include operations for foot-drop, for talipes deformities of the foot,

and for clawing and weakness of the hands. Dr. Felton Ross, the surgeon at Oji River, who spent a year with Dr. Paul Brand at Vallore, India, is an excellent technician and has a lot of good general ideas about how to treat these deformities. Some of the other conditions seen which are not common in the United States are madura foot, ainhum, infected guinea worms and Calabar swelling. There were also deformities due to rickets and poliomyelitis and there seems to be a common type of knock-knee deformity in the adolescents in Nigeria. So many acute conditions are found among the patients seen in Nigeria that it is difficult to find time to schedule elective cases. One finds many cases of old chronic osteomyelitis with acute flare-ups, and also quite a few cases of bone and joint tuberculosis.

The principal industry in Eastern Nigeria seems to be the harvesting of palm nuts for oil and the sap of the palm trees to make palm wine. Many of the traumatic cases were caused by persons falling out of palm trees. There were also a lot of people who had been injured in lorry accidents.

A bonus received from working in Nigeria is the inspiration to be obtained by observing the selfless devotion and hard work of the missionary doctors at Umuahia and Iyi Enu. In any voluntary project, such as the Nigerian Orthopedic Project, the main concern is that our efforts are wanted and appreciated. Before I left Enugu, the Minister of Health for the Eastern region, Chief B. C. Okwu, presented me with the attached letter which I feel definitely proved that our efforts in Nigeria are wanted and appreciated.

Tennessee is justly proud of its tradition as the Volunteer State. It is hoped that other Tennessee physicians will wish to volunteer for this type of overseas service.

#### Copy of Letter

On the occasion of your departing from Nigeria, I should like to take this opportunity of expressing my own personal thanks, and the thanks also of my Ministry and Eastern Nigeria as a whole, to you for the good work which you have carried out here since you arrived five weeks ago.

We are all very conscious of the fact that you and those of your colleagues who are coming after you, come to Nigeria at your own expense and with no thought of gain. This is an inspiring example to all of us.



As the Project, which you have begun and which your brother Orthopaedic Surgeons will continue, develops, we hope that great benefit will come not only to those people who come under your care, but also to our young Medical Officers who will have the benefit of working with you and learning from your advice and example.

I wish you God's speed on your journey home to the United States of America and to those of your colleagues who come after I say, Welcome.

## DEATHS

**Dr. John M. Saunders**, 59, Washington, D.C., died August 8th. He was assistant director of the Division of Health Services, Childrens Bureau, Department of Health, Education and Welfare, since 1956.

## PROGRAMS AND NEWS OF MEDICAL SOCIETIES

### Knoxville Academy of Medicine

The Knoxville Academy of Medicine met on August 14. The scientific program was presented by Dr. William Law who discussed hyperthyroidism with particular reference to its protean manifestation which all specialties will encounter.

The Academy's Judicial Council has taken significant steps and an amendment to the By-Laws of the Academy has been presented to obtain additional monies for the establishment of an office of executive secretary.

### Memphis-Shelby County Medical Society

The Society met in the auditorium of the Institute of Pathology on August 7th. The House of Delegates met at 8:00 P.M. The program presented was entitled "Common Legal Problems Facing the Doctor" by Mr. Thomas Prewitt, attorney-at-law. An interesting question and answer period followed the presentation.

### Nashville Academy of Medicine Davidson County Medical Society

The Society inaugurated its series of fall meetings on September 11 with a dinner meeting at the Hermitage Hotel. Meetings of the various hospital staffs were held, followed by a business session of the Academy and the scientific program. Speakers and

their subjects were: Dr. Oscar Auerbach, Pathologist and Senior Medical Investigator, East Orange, N.J., VA Hospital—"Smoking in Relation to changes in the Tracheobronchial Tree and Lung Parenchyma"; Dr. Saul Gusberg, Clinical Professor of Ob-Gyn., Columbia University College of Physicians and Surgeons—"Choice of Treatment in Carcinoma of the Endometrium"; and Dr. J. William Littler of New York City, President of the American Society for Surgery of the Hand—"Hand Incisions and Their Critical Relationship to Structure and Function."

### Chattanooga-Hamilton County Medical Society

The Society's regular monthly meeting was held in the Interstate Building on August 7th. The scientific program consisted of the following: "Arteriosclerotic Heart Disease and Hypothyroidism" by Dr. Wesley H. Stoneburner, and "Mammography—An Aid in Earlier Diagnosis of Breast Cancer" by Dr. C. Windom Kimsey. An interesting case report was presented by Dr. Cecil E. Newell.

### Giles County Medical Society

A program of mass immunization against poliomyelitis by the Sabin or oral, method will be sponsored by the Giles County Medical Society for the people of the county. Complete details of the program have not yet been worked out, but society officials are underway with the program.

## NATIONAL NEWS

### The Month in Washington (From the Washington Office, AMA)

Reports of possible serious side effects of three drugs led to studies and investigations by the drug industry, the American Medical Association and the Federal government.

Most attention was given to thalidomide, a non-barbiturate which produces sleep without a "hangover." Births of malformed babies, mostly in foreign countries, by mothers who took the drug during pregnancy were widely reported.

The Pharmaceutical Manufacturers Asso-

ciation established a special drug safety group to broaden scientific knowledge regarding predictability of the effect of potent drugs on humans.

The AMA started a special study of thalidomide. A Senate subcommittee opened an investigation. One of the first official acts of the new secretary of Health, Education and Welfare, Anthony J. Celebrezze, was to order a tightening of FDA controls over drug testing.

Thalidomide, was first marketed in West Germany about five years ago. It was consumed widely in West Germany, Great Britain, Australia, Portugal and Canada. One of its uses was as an antidote for the morning sickness of early pregnancy. No significant side effects, either proved or suspected, were reported until 1961.

The parent company of Wm. S. Merrell Co. of Cincinnati, Ohio, obtained in 1959 the North American marketing rights for the drug. Merrell conducted laboratory and mass clinical tests, put the drug on the market in Canada and in September, 1961, applied for FDA approval for U.S. sales.

Dr. Frances O. Kelsey, a newly employed medical officer at FDA, moved cautiously on the application and withheld approval. In February, 1961, she read a letter in the British Medical Journal suggesting that thalidomide might be causing peripheral neuritis.

For withholding FDA approval of the drug, Dr. Kelsey was awarded the Distinguished Federal Civilian Service Medal by President Kennedy. The President at the same time renewed his request to Congress that it approve the Administration's drug legislation.

First reports linking thalidomide with birth malformations reached Merrell from the German drug manufacturer in November, 1961, after a German scientist reported such indications at a medical meeting. Merrell promptly sent a warning to Canadian doctors and the approximately 1200 American doctors conducting clinical tests with it. It was requested that the drug not be given to women of child-bearing age. Merrell so advised the FDA at the time also. In early March, 1962, Merrell withdrew the drug from the Canadian market and ex-

perimental use in this country, and dropped its FDA application.

The PMA announced establishment and financing of a Commission on Drug Safety to, among other activities, "investigate an unpredictable problem which is assumed to be connected with use of the European drug (thalidomide)." Lowell T. Coggeshall, M.D., a leading U.S. Scientist and vice president of the University of Chicago, was named chairman of the commission. He formerly was president of the American Association of Medical Colleges and of the American Cancer Society.

"The basic purpose of our commission is to study the broad and complex problems of making available to the public, with adequate safeguards for both the doctor and the patient, the therapeutic advances which will result from the enormous programs and rapid pace of medical research," Coggeshall said.

"However promising new agents may be in the laboratory, no amount of laboratory experimentation and testing can provide complete assurance of effectiveness or safety when a new drug is administered to a human being. We must attempt to reduce danger to the lowest possible degree without discouraging the imaginative research from which flows mankind's increasing release from disease."

The AMA Council on Drugs began a comprehensive analysis of the effect of thalidomide on unborn infants.

In a statement, the council said:

"The AMA has been concerned about the reports of distinctive congenital malformations occurring in the offspring of patients receiving thalidomide in early pregnancy. . . .

"It has been under clinical evaluation here since 1956. There have been no published reports in scientific journals of such malformations developing in connection with these trials in the United States.

"On the evidence which has been presented, it would appear that the increased incidence of extremelia in Germany, Great Britain and Australia may be related to the use of thalidomide during the early weeks of pregnancy.

"A careful analysis of the whole problem is needed. This has not yet been done and the Council on Drugs proposes to undertake



a comprehensive analysis. Through such studies, it is hoped that further knowledge will be gained on the problem of congenital malformations and appropriate measures will be determined to safeguard our population."

FDA Commissioner George P. Larrick and Dr. Kelsey both agreed in testifying before the Senate Subcommittee that Merrell had acted with reasonable diligence in withdrawing thalidomide from the market. Dr. Kelsey said that if the entire matter had been up to her alone she would not have withdrawn it much sooner than the company.

Larrick also said then that the FDA had not found any infants born deformed in this country as a result of thalidomide administered in the mass clinical testing program. But he said the birth of deformed infants in this country had been reported where mothers had taken the drug after it had been procured in other nations where it had been marketed.

A federal grand jury was investigating Merrell in connection with another of its drugs, MER-29, which was designed to inhibit formation of cholesterol in the blood.

The FDA in April, 1960, approved an application for marketing the drug. It was an instant success. But it was withdrawn in April of this year after reports that some patients taking it had developed eye cataracts, and had suffered hair loss, skin changes and leukemia.

The AMA Council on Drugs recently reported that "much longer and more careful studies" were needed to prove the safety of the drug in general or long-term use.

The FDA also investigated Enovid, a birth control pill. The FDA said there had been 28 cases reported since September in which women given the contraceptive pill developed a blood clot called thrombophlebitis. Six of them died. But the agency cautioned that fatal blood clots can be caused by many things unrelated to any drug.

The pill's manufacturer, G. D. Searle and Co. of Chicago, said a "super-charged atmosphere over thalidomide" was responsible for the FDA's investigation of Enovid.

The company said a woman taking oral contraceptives runs no more risk of blood

clots than a woman in normal pregnancy.

It was the second investigation ordered into the contraceptive pill since it was approved for commercial sale in May, 1960, on the basis of what the FDA called "extensive research data."

## MEDICAL NEWS IN TENNESSEE

### County Medical Societies Planning Polio Clinics

A number of county medical societies throughout the state are planning to conduct clinics for mass immunization against polio, using Sabin oral vaccine.

The Nashville Academy of Medicine hopes to reach at least 300,000 persons in Davidson County.

The Memphis and Shelby County Medical Society Polio Committee has designed a program to wipe out polio in Memphis and Shelby County.

Other county societies, large and small, are in the process of arranging programs for the county-wide clinics.

The Board of Trustees of the Tennessee State Medical Association has approved and urges all county societies to provide Sabin vaccine to all people requesting it. The success of previous immunization procedures against polio is definitely demonstrated by the drop in reported cases. The objective of the clinics is to immunize all unprotected persons, eliminate any unclassified polio virus which may still exist or appear in certain areas, and prevent person to person spread of the disease.

Top medical authorities, including the U. S. Surgeon General's Advisory Committee on Poliomyelitis Control, agree that such mass immunization should be conducted during the cooler months.

### Tennessee Radiological Society

At its meeting in Memphis on April 9, the following officers were elected: President for 1962, Dr. M. D. Ingram, Nashville; President-elect, Dr. James J. Range, Johnson City; Vice president and Secretary-Treasurer, Dr. Boyer M. Brady, Memphis; Councilor to the American College of Radiology, Dr. Walter Scribner, Kingsport, and alter-

nate Councilor, Dr. Joseph M. Ivie, Nashville.

### **Rosewood Convalescent Center Opens In Memphis**

The Rosewood Convalescent Center has been opened in Memphis and will help solve a long-standing need in that area. The \$1,000,000 colonial type building has the most modern facilities for 150 patients in 72 semiprivate rooms.

Rosewood is an institution for long-term illnesses and every effort has been made to make it an attractive place, according to the sponsoring foundation.

### **Central State Hospital**

With the assignment of Dr. Charles Corbin as resident, a program of training in child psychiatry has been inaugurated, in conjunction with Vanderbilt University School of Medicine and the Tennessee Department of Mental Health. Consultants in this specialty have been appointed to the medical and dental staff of the Hospital.

At the present time, there are 25 patients under the age of 17 who will benefit from this service. This is only a beginning and does not represent a complete childrens' residential treatment facility at this hospital.

★

### **Vanderbilt University School of Medicine**

Three Vanderbilt doctors have been awarded grants by the American Heart Association totaling \$27,995. The AHA award went to Dr. Roger H. Bowman, assistant professor of physiology; Dr. Murray Heimberg, associate professor of pharmacology; and Dr. George V. Mann, associate professor of nutrition.

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A \$11,000 grant for research in heart disease has been awarded to the School by the Life Insurance Medical Fund. The grant was made to Dr. Victor A. Najjar for the study of allergy and allergic diseases related to immunity.

★

The annual fall meeting of the American Society for Pharmacology and Experimental Therapeutics was held as a four-day session beginning August 27. Dr. Allan D. Bass,

Chairman of the Department of Pharmacology, headed the local Committee. Some 700 attended the meeting, which included some 200 papers on its program. Among the speakers were men of international and national note. The papers ranged on topics dealing with the discovery, testing and perfecting of drugs, toxicology, narcotic addiction, hazards of radio-active substances and the like.

### **Meharry Medical College**

A division of dermatology has been established. The new division will conduct research in skin diseases and will provide medical treatment at Hubbard Hospital for such diseases when it is fully organized and staffed. Dr. Thomas W. Johnson will head the new division. Dr. Johnson is a graduate of Tufts University in Boston.

### **University of Tennessee College of Medicine**

Six Memphis physicians have been appointed to the full-time academic and research staff of the College. They are: Dr. Albert W. Biggs, assistant professor of urologic surgery; Dr. Lewis D. Anderson, assistant professor of orthopedic surgery; Dr. William T. Dobbins, instructor in pediatrics; Drs. David H. Holt, Fred Hatch, Jr. and Robert L. Rainey, instructors in medicine.

A \$57,777 award has been made for the treatment of sickle cell anemia by the National Institutes of Health of the Public Health Service.

A \$30,000 Army grant has been awarded to Dr. Roger T. Sherman, associate professor of surgery, for a study of blister burns.

A \$36,800 grant to the Department of Anatomy has been made by the U. S. Public Health Service to be used to support the training of graduate students in the anatomic sciences.

Dr. William H. Lee, Jr., assistant professor of surgery, has been awarded a \$17,247 grant by the Public Health Service to study changes in blood circulation which occur in persons who have been burned or diseased.

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Staff members have been promoted as follows: Drs. Howard B. Hasen, William H. Morse, William H. Walker and Howell D. Woodson, instructors to assistant professors



in urology; Drs. John B. Hamsher, Gordon L. Mathes and Maurice P. Segal, assistants to instructors in urology; Dr. George S. Lovejoy, instructor to assistant professor and Dr. Joseph A. Rothchild, assistant to instructor, in pediatrics; Drs. Margaret A. Halle, Ralph S. Hamilton, Fred C. Wallace and W. Wiggins Wilder, instructors to assistant professors in ophthalmology; Dr. Claude D. Oglesby, assistant to instructor in ophthalmology; and Dr. Helio Lemmi, instructor to assistant professor in neurology; Dr. Audrey N. Roberts, from instructor to assistant professor of preventive medicine; Dr. Herbert Gardner, instructor to assistant professor in radiology; Dr. G. H. Aivazian, associate professor to professor, Dr. Allen O. Battle, instructor to assistant professor, and Dr. James A. Wallace, assistant to assistant professor in psychiatry; Dr. Roger T. Sherman, assistant professor to associate professor in surgery; Dr. Gerald B. Spurr, assistant professor to associate professor in clinical physiology; Dr. Ricardo Rafael Fuste was appointed assistant professor of radiology.

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Promotion of eight members of the staff of the School of Basic Medical Sciences has been announced: Dr. E. Foster Williams, from associate professor to professor, Dr. William E. Jefferson, from assistant professor to associate professor, in biochemistry; Dr. N. R. DiLuzio from associate professor to professor, and Dr. Clark E. Grosvenor, from assistant professor to associate professor in physiology; Dr. Jean Holbrook, from instructor to assistant professor, and Dr. Joe Hall Morris from assistant professor to associate professor in anatomy; Dr. Roy Martin Smith, from assistant to assistant professor of pathology; Dr. James F. Fisher, from assistant professor of pharmacology to associate professor.

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Dr. Lloyd D. Partridge, former member of the staff of the Yale University College of Medicine has joined the staff as associate professor of physiology.

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Dr. Irwin L. Baird, former assistant professor of anatomy at the University of Kansas has joined the staff as associate professor of anatomy.

Dr. Vincent J. De Feo, on the staff in the Department of Anatomy at the University of Illinois College of Medicine for the past five years, is visiting assistant professor of anatomy during the summer quarter.

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Thirteen physicians have been appointed to the volunteer staff of the College: Drs. Norman H. Davis, T. Kyle Creson, Jr., and Thomas F. Mogan, assistants in medicine; Drs. Hector S. Howard, Jr. and Thomas V. Stanley, Jr., assistants in surgery; Dr. George L. Miller, assistant in anesthesiology; Dr. Joseph M. Scott, assistant in ophthalmology; Dr. Joe Hardy Miller, assistant in neurosurgery; Drs. Alfred Jerome Mueller and Eugene Wesley Fowinkle, assistants in preventive medicine; Dr. David S. Pankratz, lecturer in the department of psychiatry; Drs. John J. Shea and David F. Austin, assistants in otolaryngology.

## PERSONAL NEWS

**Dr. Moore Moore, Jr.**, Memphis, has been appointed to the rank of Rear Admiral in the Medical Corps of the U. S. Naval Reserve, the eleventh doctor to attain this rank in the Medical Reserve. He was sworn in on May 1, at Millington by Captain G. M. Kahn, Commanding Officer of the Naval Hospital. In attendance were Rear Admiral Joseph Clifton, Chief of Naval Air Technical Training, and several of Dr. Moore's closest friends in Memphis. (Dr. Morton J. Tendler, of Memphis, has been the fourth one to attain this rank, appointed in 1955.)

**Dr. John W. Morris**, Somerville, is director of the Fayette County Health Unit.

**Dr. W. M. Phillips** has joined the staff of the Trenton Clinic as an associate of **Drs. Edward Barker, Eugene Crafton and James Hall**. Dr. Phillips will also be chief and head of the department of surgery at the new hospital in Trenton.

**Dr. John Appling** has joined **Dr. Hays Mitchell** in Cleveland in the practice of pediatrics.

**Dr. Robert Christensen**, Kingsport, was a recent speaker before the Rotary Club.

**Dr. E. T. Pearson**, Elizabethton, has been elected president of the Carter County Unit of the American Cancer Society. He succeeds **Dr. Dillard M. Sholes, Jr.**

**Dr. Joe L. Wilhite** has begun medical practice with **Dr. Paul Teague** at the Medical Center in Parsons.

**Dr. Richard L. Steele** has joined **Dr. John A. Jarrell, Jr.**, Nashville, in the practice of anesthesiology and consultation on Pulmonary Function and Inhalation Therapy.

**Dr. M. M. Young**, Crossville, is the director for the public health district including Cumberland, Rhea, Bledsoe and Sequatchie counties.

**Dr. Searle McMurry** and **Dr. James R. Guyton** have joined the staff of Ft. Sanders Presbyterian Hospital, Knoxville.

**Dr. Frank London**, Knoxville, was a recent speaker before the Tennessee Secondary Schools Athletic Association conference at Cookeville.

**Dr. Gordon L. Mathes**, Memphis, recently addressed the Kiwanis Club at Whitehaven.

**Dr. Robert D. MacMillan** has joined **Drs. Harry T. Moore, Jr., Preston H. Bandy, Marion L. Smith, Lee W. Stewart** and **J. Sumpter Anderson, Jr.**, Nashville, in the practice of anesthesiology.

**Dr. T. Edward Potts**, Nashville, has joined **Dr. Paul G. Morrissey, Jr.**, in the practice of Surgery.

**Dr. Robert H. Cofer** has begun the practice of medicine in Cleveland.

**Dr. Joseph C. Bailey** has recently begun the practice of ophthalmology in Murfreesboro.

**Dr. B. H. Webster**, Nashville, announces the removal of his office to 420 Mid-State Medical Center in Nashville.

**Dr. William H. Roberts**, Humboldt, has established his practice of ophthalmology in St. Mary's Hospital.

**Dr. Thomas F. Mullady** has joined the Diagnostic Center as an associate of **Dr. William B. McGuire, Jr.** and **Dr. Maurice S. Rawlings, Jr.**, in Chattanooga.

**Dr. Charles W. Fitch** announces the opening of his office for the practice of pediatrics in Jackson.

**Drs. James A. Kirtley, Jr., Douglas H. Riddell,** and **George W. Holcomb, Jr.**, Nashville, announce their association in the practice of surgery.

**Dr. Eugene M. Regen, Jr.**, has joined **Drs. Eugene M. Regen** and **Arnold Haber**, Nashville, in the practice of orthopedic surgery.

**Dr. H. J. P. Harding, Jr.** has joined **Dr. Valton C. Harwell, Jr.**, Columbia, in the practice of obstetrics and gynecology.

Urinary Tract Diseases-Diagnosis and Treatment, March 7, 8.

Elementary Clinical Electrocardiography, March 18-22.

Surgery of the Hand, March 21, 22, 23.

Emotional Disturbances of the Adolescent, May 15, 16, 17.

Fractures and Dislocations, May 22, 23, 24.

Anesthesiology for the General Practitioner, September 16-20.

Endocrinology-Recognition and Treatment, October (dates to be determined).

Obstetrics and Gynecology, October 23, 24, 25.

Preoperative and Postoperative Care of the Surgical Patient, November, 6, 7, 8.

For additional information, write to the Postgraduate Department, The University of Tennessee Medical Units, 62 South Dunlap, Memphis 3, Tennessee.

## Physicians Recently Licensed in Tennessee

Ann G. Robbins Poindexter, Atlanta, Ga.

Lloyd J. Story, Johnson City

Francis M. Wilson, Elizabethton

Gustav Andras Batizy, Nashville

Frank Ray Pitzer, Memphis

David O. Patterson, Memphis

James O. Stewart, Nashville

James Armand Truan, Knoxville

Helen Kay VanFossen, New Orleans, La.

Henry B. Smith, Valdosta, Ga.

Eugene C. Klatte, Indianapolis, Ind.

Philip R. Rothrock, Kingston



## Two Postgraduate Courses Announced by U.T. College of Medicine

A course in "Diseases of the Newborn Infant" will be given at LeBonheur Hospital, Oct. 3, 4 and 5, by the Division of Pediatrics under the direction of Dr. James G. Hughes, Chairman of the Department. The program is designed for physicians in general practice to acquaint them with the adverse prenatal circumstances that may distort growth and development of the fetus, and the hazards of labor and delivery that may impair the chance of survival of the infant. Subjects to be discussed are: (1) physiologic mechanisms of normal full term and premature infants, (2) the abnormalities of diseases, (3) nutrition and fluid and electrolyte requirements, (4) common emergencies of the newborn (5) brain damage, and (6) respiratory distress. Roentgenographic, pathologic conferences and case presentations are also included.

To create an informal atmosphere and to give individual attention to the problems of the physicians attending the course, the enrollment will be limited to 20 registrants. Twenty-one (21) hours of Category I credit have been approved by the A.A.G.P. for attendance.

## ANNOUNCEMENTS

### Postgraduate Courses University of Tennessee College of Medicine

Fourteen postgraduate courses for physicians will be offered by the University of Tennessee College of Medicine from October, 1962 through November, 1963. Courses in 1962 and the dates they will be presented are:

Diseases of the Newborn Infant, October 3, 4, 5.

Obstetrics and Gynecology, October 17, 18, 19.

Radiology, October 22-26.

Rheumatology, October 31, November 1, 2.

Programs in 1963 and the dates are:

Emergency Surgery in the Care of the Injured Patient, Feb. 13, 14, 15.



## Calendar of Meetings—1962

### STATE

- September 27-28—**SYMPOSIUM ON CONGENITAL DEFECTS**—Vanderbilt University School of Medicine, Nashville.
- October 3-5 —**POSTGRADUATE STUDY**—Diseases of the Newborn Infant, University of Tennessee College of Medicine at LeBonheur Children's Hospital, 848 Adams Ave., Memphis. Advance Reservations only. Postgraduate Dept., University of Tennessee, 62 So. Dunlap, Memphis.
- October 12-13 —**TENNESSEE VALLEY INDUSTRIAL HEALTH CONFERENCE**—Mountain View Hotel, Gatlinburg, presented by the Tennessee Valley Section of the American Industrial Hygiene Association. Program will be of interest to both doctors and industrial nurses. Address inquiries to D. D. Cowen, Union Carbide Nuclear Co., P. O. Box X, Oak Ridge.
- October 15-19 —**ELEVENTH ANNUAL CONFERENCE OF THE UNITED STATES CIVIL DEFENSE COUNCIL**—Program of the Health Services Advisory Committee, at the James White Memorial Auditorium-Coliseum, Knoxville. (Many speakers of national repute will take part.) Registration fee \$20.00. For information address Mr. Wallace Newman, Director of Civil Defense, Knoxville.
- October 17-19 —**POSTGRADUATE STUDY**—Obstetrics and Gynecology, University of Tennessee College of Medicine, Memphis. Advance reservations only. Contact Postgraduate Dept., University of Tennessee, 62 So. Dunlap, Memphis.
- October 25-26 —**TENNESSEE ACADEMY OF GENERAL PRACTICE**—14th Annual Scientific Assembly, Hermitage Hotel, Nashville.

### REGIONAL

- September 21-22—**AMERICAN COLLEGE OF OBSTETRICIANS AND GYNECOLOGISTS**, District VII, Little Rock, Arkansas
- September 24-25—**THE TENNESSEE VALLEY MEDICAL ASSEMBLY**, Tenth Annual Assembly, Read House, Chattanooga
- September 30 —**FIFTH ANNUAL MEDICAL PROGRESS ASSEMBLY**, sponsored by the Birmingham Academy of Medicine and the Alabama A.G.P. Registration fee \$10.00
- October 1-2 —
- October 3 —**POSTGRADUATE COURSE**—Anesthesiology—Special emphasis for General Practitioners, General Hospital, Lexington, Kentucky
- October 4-6 —**AMERICAN COLLEGE OF OBSTETRICIANS AND GYNECOLOGISTS**, District IV, Barringer Hotel, Charlotte, North Carolina
- November 12-15 —**SOUTHERN MEDICAL ASSOCIATION**, Hotel Fontainebleau, Miami Beach, Florida
- November 15-17 —**SOUTHEASTERN STATES CANCER SEMINAR**, George Washington Hotel, West Palm Beach, Florida

### NATIONAL

- October 1-4 —**SCIENTIFIC MEETING OF THE INTERSTATE POSTGRADUATE MEDICAL ASSEMBLY**, Palmer House, Chicago, Illinois
- October 2-3 —**AMERICAN MEDICAL ASSOCIATION 22ND CONGRESS ON OCCUPATIONAL HEALTH**, Somerset Hotel, Boston, Massachusetts
- October 4-6 —**AMERICAN MEDICAL ASSOCIATION—FIRST NATIONAL CONGRESS ON MENTAL ILLNESS AND HEALTH**, Palmer House, Chicago, Illinois
- October 15-19 —**AMERICAN COLLEGE OF SURGEONS**, Clinical Congress, Atlantic City, New Jersey
- November 25-28—**AMERICAN MEDICAL ASSOCIATION**, Clinical Meeting, Los Angeles, California.

A postgraduate study in "Obstetrics and Gynecology" will be given Oct. 17, 18 & 19, by the Department of Obstetrics and Gynecology under the direction of Dr. Phil C. Schreier, Chairman. The program is designed for physicians in general practice and will include lectures, discussions and ward rounds on the wards of The John Gaston Hospital.

Dr. John W. Huffman, head of the Department of Pediatric Gynecology at the Children's Memorial Hospital, Chicago, and professor in the Department of Obstetrics and Gynecology at Northwestern University, will be the guest speaker.

For an informal atmosphere and to give individual attention to the problems of the attending physicians, enrollment will be limited to 20.

Twenty-one (21) hours of Category I credit have been approved by A.A.G.P. for attendance in this course.

### AMA Congress on Occupational Health

The twenty-second Congress will be held at the Somerset Hotel, Boston, October 2 and 3. Presiding will be Dr. James H. Sterner, who is Chairman of the AMA Council on Occupational Health and Medical Director of the Eastman Kodak Company, Rochester. The two-day program will be of interest to those who are industrial physicians full-time, as well as to the many family physicians who do part-time work in industrial medicine. The speakers include men from a variety of specialties and of names well known in industrial medicine and from depart-

ments of preventive medicine in some of our best known medical schools. The program will be well worthwhile for those interested in Occupational Medicine.

### Tennessee Chapter, American College of Surgeons

Saturday, September 29 On, the following program will be presented at the Vanderbilt University School of Medicine,

"Treatment of Cancer of the Cervix by a Combination of Radium and Surgery"—John C. Burch, M.D., and Robert L. Chalfant, M.D.

"Management of Tendon Injuries of the Hand"—S. Benjamin Fowler, M.D.

"Carcinoma of the Colon in Childhood"—Robert T. Sessions, M.D., Herman J. Kaplan, M.D., and Douglas H. Riddell, M.D.—Discussion: Barton McSwain, M.D.

"Experience with an Ileal Loop for Urinary Diversion"—A. Page Harris, M.D., and David M. Woodhead, M.D.

"Diagnosis of Surgical Lesions of Head and Neck"—Louis Rosenfeld, M.D.

"Experience with Surgical Treatment of Portal Hypertension in Childhood"—John H. Foster, M.D., George W. Holcomb, Jr., M.D. and James A. Kirtley, Jr., M.D.

"Ventriculo-Atrial Shunts for Hydrocephalus"—William F Meacham, M.D. and W. R. Jouett, M.D.

"The Current Status of Renal Homotransplantation"—Charles F. Zukoski, III, M.D. and James M. Callaway, M.D.

"Advantages and Limitations of Culdoscopy"—Robert W. Noyes, M.D.

"Recent Advances in Management of Carcinoma of the Breast"—Surgical Aspects: B. F. Byrd, Jr., M.D.—Radiation Therapy: Granville W. Hudson, M.D.—Endocrine Therapy: Addison B. Scoville, Jr., M.D.—Chemotherapy: John L. Sawyers, M.D.

"Dangerous Preoperative Drugs"—J. Sumpter Anderson, M.D.

"Present Day Concepts of Cardiac Resuscitation"—Harold A. Collins, M.D.

"Management of Chest Trauma"—Rollin A. Daniel, Jr., M.D.

Panel on "Controversial Issues Facing the American College of Surgeons"—Where the College Stands: James H. Spencer, M.D., Assistant Director of the American College of Surgeons How to Reduce Malpractice Suits against Surgeons: James A. Kirtley, Jr., M.D.

Dr. Van Fletcher, President, will preside over the morning program, and Dr. Chas. C. Trabue, Vice President, will preside in the afternoon.

A Smorgasbord Luncheon will be served in the Doctors' Dining Room, followed with a guided tour of the new Circular Wing of Vanderbilt Hospital, and the Social Hour and Dinner will be held at the Richland Country Club, beginning at 5:15 P.M.

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## PLACEMENT SERVICE

*The Placement Service of the Tennessee State Medical Association is designed to assist doctors and communities to get together. Further information and contacts to both physicians and communities are available from the Public Service Office, 112 Louise Avenue, Nashville 5, Tennessee.*

### Locations Wanted

A 32 year old general surgeon, with four years residency, would like clinical, associate or solo practice in east or middle Tennessee. Married; Protestant; Graduate Emory University. Available July 1962. LW-437

A 38 year old general practitioner, with residency training in surgery, would like clinical, assistant, associate, industrial or institutional practice in any size community of Tennessee. Graduate University of Virginia; married; Protestant. Available now. LW-446

A 30 year old Dermatologist would like clinical or associate practice, with part-time teaching, in west Tennessee town. Graduate of University of Texas Medical Division; married; Episcopalian; available July 1963. LW-447

A 33 year old Internist would like institutional practice in any section of Tennessee. Graduate St. Louis College of Medicine; married; Catholic; residency training. Available fall of 1962. LW-448

A Board certified general surgeon, with interest in urology, graduate of Vanderbilt School of Medicine, would like clinical or associate practice in any city or town in middle or west Tennessee. Age 34; married; Protestant. Available at anytime. LW-453

A Board eligible general surgeon, with four years residency, graduate of Wisconsin University, would like clinical, assistant, associate or industrial practice in east Tennessee city of 20,000 plus upon completion of military service. Age 32; married; Lutheran. Available January 15, 1963. LW-454

A 36 year old Anesthesiologist, graduate of Rome Medical School, Italy, is interested in practice in any community or town in Tennessee over 10,000. Married; Catholic; residency training; available January 1963. LW-455

A 32 year old Board eligible surgeon (general and Thoracic), graduate of Tulane Medical School, presently in the Air Force, would like associate or solo practice in any town or city in Tennessee over 40,000. Married; Methodist; available August 1963. LW-456

A general practitioner, now interning, would like clinical or associate practice in east Tennessee town of 2,000 to 25,000. Age 28; married; graduate University of Tennessee; available January 1, 1963. LW-457

A 33 year old physician, Board eligible in internal medicine, graduate of the University of Louvain, with three years residency, would like clinical, group, institutional, or associate practice in any location in Tennessee in or near a large city. Married; Jewish; available January 1963. LW-458

### Physicians Wanted

Physician in east Tennessee community of 6,000 wishes an associate in general practice. Age 25-35, with one year internship. New, private office; examining rooms and equipment; hospital located in community. PW-134

Middle Tennessee community of 8,000 in need of physician in the field of internal medicine. Two years internship and one year residency training preferred. Office space available. Hospital in area. PW-136

Southern Tennessee community of slightly over 500 in need of general practitioner. Trade area larger. No other physician in community. Office space and some equipment available. PW-147

Hospital in upper east Tennessee county, with population of over 30,000, would like general surgeon to establish own surgical practice in area. Would prefer physician with one years internship, three years residency, Board qualified or Board preferred. Good industrial area with excellent schools and churches; near TVA lakes. PW-173

Small north Tennessee town in great need of physician. Approved for Sears-Roebuck Foundation assistance. No other physician in area. Medical economic survey report available upon request. PW-177

Town located only a few miles from the Tennessee line in Kentucky needs replacement for general practitioner leaving for further training. Housing available; 7 room office completely equipped and furnished. Hospital 12 miles. PW-180

Town of 2,200, near large metropolitan area, would like general practitioner to establish practice. No other physician in area. Will build office to suit physician. PW-182

Excellent opportunity for obstetrician or general practitioner in east Tennessee city of 25,000. Office, next to hospital, for lease. Will introduce. Owner moving to Florida when occupant obtained. Deferred lease payment possible. PW-183

FOR SALE—practice, office and office equipment in middle Tennessee city of 6,000. Excellent opportunity for young physician. PW-184

Small upper east Tennessee community in need of physician to replace retired general practitioner. Approved for Sears-Roebuck Foundation assistance. Survey report available upon request. Housing and office space available. Near industrial area. PW-185

# Journal of the Tennessee State Medical Association

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No. 10

## A Clinical And Laboratory Evaluation Of Rape\*

LESTER R. GRAVES, JR., M.D. and J.T. FRANCISCO, M.D., Memphis, Tenn.

*Medical evidence usually determines whether the complaint of rape was alleged or real. Since this is true, a doctor is usually the key witness, and in addition also may need to double as an "expert." Thus, the attending physician has a legal responsibility he cannot avoid. The need for careful examination and meticulous records is obvious. The necessary details are spelled out in this paper.*

Is there any other word in our vocabulary that we would rather not hear? A word so packed with emotion, and so possessive of the imagination that its mention paints such a terrible picture, a word that inflicts on its victim a mental scar that will never heal and on the inflictor the most revengeful anger and disdain of the human race.

Sexual offenses including rape are now more prevalent than ever before. The unhealthy air surrounding such a distasteful situation includes all who become involved. This unwanted experience is shared by the physician who is called upon to collect and evaluate the physical evidence.

Assuming that a protocol for collecting all necessary information is known, through previous experience, then the primary penalty for becoming involved is the inconvenience of presenting testimony in court. Not all of us have had the experience of being called upon for such a medicolegal service.

It is for this reason that an organized protocol is necessary to insure your testimony that inevitably will be requested at a later date. How embarrassing it would be not to be able to answer questions requiring medical knowledge, how more embarrassing not to have gathered this obvious necessary information when it was available.

We expect to collect by examination, the positive signs of force, magnified by the victim's resistance. Thus, the medical evidence is concerned with the signs of lack of consent and proof of intercourse. It is always well to bear in mind that there is no charge which is more easily made than that of the crime of rape and there is no crime in which the innocence of the accused may be so difficult to prove. Conversely, therefore, the medical evidence may be such as to prove that no crime has been committed. The examiner should realize the responsibility resting on his ability to collect the medical evidence.

The purpose of this paper is to formulate a protocol, which may be referred to later, to insure that one collects all the necessary information.

### Legal Aspects and Preliminary Evaluation

It must be remembered that before the victim is examined her consent is mandatory, preferably in the presence of a witness. In the case of a child or a mentally afflicted patient, the consent of a parent or guardian should be obtained. To proceed without this authorization constitutes a technical assault and renders the examining physician liable.<sup>1</sup> Examination without consent can only be achieved by court intervention.

The report should be initiated by record-

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ing the date and time you were called to see the patient, the time and place of examination; also the full name of the patient and the nurse attending at the time of the examination. These facts may help the court establish whether the statement of the defense or prosecution regarding movements of the alleged victim after the attack is true. It is also important to the physician to know the exact (or approximate) time interval between the alleged attack and the examination. This will help correlate the physical findings with the time interval. An assistant's name recorded in this report may seem superfluous but will certainly never be a liability and may be a legal asset.

Before proceeding with the examination the victim should be encouraged to relate the episode in her own way. As the experience unfolds, record an abstract of this history. Do not record the lurid details, for this may result in a cross-examination on nonmedical evidence. Make sure the report includes these points:

- (1) Age and marital status
- (2) Gravidity and parity
- (3) Date of last menstrual period
- (4) Approximate date of last coitus
- (5) Time elapsed between alleged assault and the examination
- (6) Whether or not any vaginal cleansing action has been performed since the assault or if at all
- (7) Any recent treatment by a physician for genitopelvic disorders
- (8) Record and evaluate any presented symptoms as related to micturition, defecation, hemorrhage or pain
- (9) Note of patient's emotional status
- (10) If there is evidence of intoxication, an alcohol determination is suggested

This information may later reveal its importance in court. Certainly the perineum stretched by several deliveries or the perineum of a married woman used to frequent coitus would offer less resistance than that of a younger unmarried woman. This, however, is not an infallible finding, as occasionally there is reported an intact hymen following frequent coitus and even delivery. So, in exceptional cases it is difficult to determine that intercourse has taken place. These exceptions to the rule prevent absolute opinions.

Knowledge of the last normal menstrual period may later help establish the possibility of pregnancy following rape. Thus, the

importance of the date of last coitus immediately becomes apparent. The significance attached to the time intervals has been mentioned. You may have noticed that throughout this report reference is made to the incident as the "alleged" assault and so it should be until the court makes the decision. This may appear unduly suspicious but it is so easy for some designing woman, for the purpose of spite or revenge, to deceive the physician. Remember to observe with care what is included in this report for it is a legal document.

In my experience most women, unless physically unable to do so, take a douche after the attack either because they feel unclean, or because they are afraid of the possibility of pregnancy. In this case, of course, sperm are not likely to be found in vaginal secretions. Any recent treatment for a genitopelvic disease should be determined. A major part of the inflammation may be attributed to this rather than to trauma. The symptoms related by the patient will guide the examination and help determine the extent of injury. The latter two points listed are of help more to the court; that is, the patient's emotional status and evidence of drug or alcoholic intoxication.

In addition, determine if the garments were worn at the time of attack. If so, the clothes should be examined for evidence of a struggle. Look for tears, lost buttons, grass or mud stains or stains of blood or semen. Any suspicious stains should be marked. Semen imparts a stiffness to cloth and on light fabrics a sheen may be seen. Seminal stains fluoresce under ultraviolet light,<sup>2</sup> however, this means of identification can only be used as a screening procedure since other stains fluoresce also. Segments of the stained cloth should be taken as samples for further examination.

#### Physical Evaluation

The prerequisites for the nonpersonal portion of the examination now satisfied, the physician should next evaluate the entire exterior of the body surface for marks of violence. The head and throat demand special attention, for any blow to the head or strangulation by choking would impair or completely nullify any resistance by the victim. All bruises, lacerations, abrasions,

bite marks, etc. should be described exactly and located anatomically. A diagram drawn at the time of the examination is often helpful and may be referred to later.

Seminal matter may be found about the pubic hairs. Matted hair should be removed and kept for examination. The method of collecting these specimens to positively identify them to the case in question will be discussed later. The immediate inner aspects of the thighs as well as the labia majora and minora should be described whether normal or abnormal. At this point, samples from the vaginal vault should be procured for later evaluation. This can be accomplished very simply. A Graves speculum lubricated only with water is introduced and smears made of material taken directly from the fornices. If a speculum cannot be introduced due to the small size of the vaginal orifice then a small diameter glass tube may be introduced with an attached suction bulb. Three moist preparations are prepared and later an extensive microscopic search is made for the presence of sperm. Assistance may be had by using various stains as well as utilizing the oil immersion lens.<sup>2</sup> Be sure of your positive identification of sperm. The visualization of spermatozoa is the only reliable proof of the presence of semen, for though other chemical tests are available they are not specific.

Semen is a substance of gelatinous consistency which in time liquifies. I can find no scientific data available which describes the estimated time one would expect not to find sperm in the vaginal vault after intercourse coexistent with normal activity. The identification of sperm always strengthens the prosecutor's case. However, coitus interruptus may have been practiced or the assailant may have had aspermia or azoospermia and, therefore, no sperm may be found. The presence of spermatozoa in the vagina would become less significant if intercourse with the husband had occurred within the past three days. In a similar manner, the presence or absence of gonococci should be ascertained by evaluating vaginal and urethral discharge. If gonorrhea is present and is known to have developed within a few days after the assault and if the accused is found to have gonor-

rhea, the case against him is strengthened.

After obtaining the vaginal specimens, attention is returned to completion of the examination. The description of the vaginal orifice or hymen will require special care. Any disfigurement of the hymen in the virgin is generally the principal evidence of rape. The presence of abrasions or tears of the hymen should be recorded, as well as the approximate diameter of the vaginal orifice measured in centimeters. The hymen is often represented by a narrow ring of firmly firm tissue forming the vaginal orifice and when traction is applied maintains its unbroken contour though sometimes gaping appearance. In such cases, the dilation may have been the result of masturbation or childhood investigation secondary to a pinworm infection. It is important to remember that intercourse may occur without hymenal rupture and conversely hymenal tears are not always caused by intercourse. When there is any evidence of injury about the genitals of a woman or child alleged to have been molested, it does not necessarily mean that the injuries are due to the attack. It is entirely possible that the lesions may have been caused by accident or may have been self-inflicted. All these things must be kept in mind.

No attempt will be made to categorically describe the physical findings for any individual, according to age or marital status, for the variety of circumstances which may occur in any case causes an overlapping of physical findings. However, in women who have had frequent coitus, the hymen may be completely unrecognizable as would also be the case in women who have delivered children. Rape committed on married women and on women who have previously engaged in intercourse would be less likely to cause damage unless considerable violence was used. Children, when assaulted, usually show no general body injury, for the child does not know to resist. Except in cases of violent attack penetration does not occur; however, when force is utilized there may result a deep third degree laceration. In any event, when examining a child be gentle; analgesics or anesthesia may be necessary in some cases. A rectal examination is preferable in every case where the hymen will not admit the examining finger.



If possible, inspect the walls of the vaginal vault. It would be of aid to sketch diagrammatically the condition found. The obvious laceration will offer no difficulty in recognition even several days after the inflicted injury. Venereal lesions, if found, should be investigated. A final point I recommend, evaluate the uterus and adnexae to rule out an existing pregnancy, or other conditions.

#### Laboratory Evaluation

The proper use of laboratory facilities can frequently be of great assistance in the evaluation of suspected rape. Laboratory procedures in this regard are at best supporting and the laboratory examination should by no means be a substitute for meticulous observation. It is the responsibility of the initial examiner, however, to be aware of all the possible laboratory aids that he may call upon in supporting his evaluation. These can be classified in four categories:

- (1) Seminal fluid (the most obvious)
- (2) Blood
- (3) Hair and fibers
- (4) Other

Seminal fluid is the first specimen that comes to mind when one considers the laboratory support of an alleged rape case and rightly so since this is an area of great importance, but not the only one as will be illustrated later. The state of the seminal fluid is an important consideration and may be fresh, i.e., still in vaginal pool or dried on articles of clothing or furniture. The procedure in each case is different. In the case of fresh fluid it is important that the specimen be obtained with a glass tube such as the type used for vaginal cytology. A metal or wooden spatula may also be used, but cotton swabs are to be condemned since many sperm may be lost by this method. Fresh specimens should be examined immediately. If the sperm are still motile, it presents good evidence to help pinpoint the time of ejaculation. Usually sperm will remain motile in the vaginal pool for several hours, but it is impossible to give a more exact accounting of time.

It has been reported that sperm can be motile in seminal fluid five days old, but this observation is doubted by most authorities.<sup>3</sup> The moist preparation is best made

by placing a drop of the vaginal contents on the slide and placing a coverslip over this drop and examining at a magnification of 500 diameters with the diaphragm on the condenser of the microscope constricted. To prepare a permanent preparation, one must smear a quantity of the vaginal contents on a slide, briefly dry, pass gently three times through a flame, fix for three minutes in methyl alcohol, and stain with Löffler's methylene blue for one minute, wash with water and dry. In the fresh state the sperm head will stain slightly bluer than the remainder of the structure. It must be remembered that the presence of sperm is the only positive proof of ejaculation, but the finding of one intact sperm provides that proof. The presence of aspermia, of course, eliminates this positive scientific proof, but other tests can give good presumptive evidence and will be elaborated under the examination of the dried specimen. The use of a millipore filter may prove of value in negative examination on unconcentrated vaginal contents.<sup>4</sup>

Seminal stain on clothing, furniture, pubic hairs, or skin can be very useful, especially if a direct examination is impossible or negative. If a stain is to be mailed, it is important to emphasize that the stain must be air dried without the use of heat. Stains dried properly may have demonstrable sperm for periods up to five years.<sup>3</sup>

In the examination of a dried stain, the use of ultraviolet light is of value in screening the stain. When this light reveals a bluish fluorescence the stain should be further examined. In the absence of this fluorescence the stain is not seminal fluid. Again, only the presence of sperm is positive proof, but the findings of a positive fluorescence test and a high acid phosphatase level is good presumptive evidence.<sup>5</sup> Additional tests which may be performed on seminal fluid and stains are grouping tests. Secretors of A and B substance will also secrete these substances in the seminal fluid; and the A and B blood group can be determined from such fluid. The absence of these substances does not permit one to say whether this specimen is from an O group of a nonsecretor, however.

The second major area of laboratory assistance is the typing of dried blood stains

which may be found on the victim or the suspected assailant. It is well to note that the separation of menstrual and non-menstrual blood may be accomplished in some cases, but it is, at best, a very difficult task. In the examination of dried blood stains the same precaution should be observed as is true with seminal stains, i.e., the stain must be dried without heat prior to mailing, for a moist stain will deteriorate rapidly and lose its value. The stages of analyzing a dried blood stain are three:

- (1) Is it blood?
  - a. Presumptive
  - b. Confirmatory
- (2) Is it human?
- (3) What is the type?

The presumptive test is quite similar to the usual laboratory procedure for occult blood with this important exception. The peroxide and benzidine reagent must be added separately to eliminate the possibility that such agents as bleach might be present and would interfere. This presumptive test, if negative, will eliminate the stain from further study. But if positive it must be confirmed by a more specific test such as the formation of hemochromagen crystals. The use of precipitin tubes and a rabbit antihuman sera with suitable controls will prove the presence of human protein. The use of an absorption test of antisera by the stain can show the ABO blood group in many cases.

Examination of hairs and fibers can often be of great value but is frequently neglected. A careful examination of the pubic region of the victim or the accused may, often reveal hairs that are of a different origin, i.e., red hair on a victim with black pubic hair. The presence of fibers on the clothing or body of a person, either the victim or the alleged assailant, may be very good evidence to support the charges.

Other areas of laboratory assistance which may be of value include fingernail clippings, blood analysis for the presence of drugs, or the presence of an infection such as gonorrhea. The fingernail clippings of a person may aid since the presence of fragments of skin or hair under these clippings may link one person to another. The presence of drugs in the body, especially the assaulted person, may be important if the

alleged crime has occurred by the use of these drugs, i.e., rape of a person while under the influence of alcohol, barbiturates, or other compounds.

In all of these areas these portions of evidence, unless examined by the original examiner, must be marked with all necessary information for identification, such as type of specimens, name of victim or suspected assailant, date and time of collection, person collecting the specimen, and sometimes how it was collected. If the specimen is not delivered to the laboratory by the person who collected the specimen, it is preferable that the specimen be placed in a clean container, sealed and the receipts be exchanged between collector, messenger, and laboratory to preserve the chain of evidence.

### The Written Report

The completed report should be made out in duplicate. One copy will usually be requested by the legal department, the second copy (word for word) is for your file. We cannot impress too strongly the benefit of the completeness of this report for your testimony may be requested at a later date when you cannot rely on your memory with absolute assuredness.

As a general rule of law, the court wishes a witness to state the facts known or observed by him, not an opinion based on those facts. For this reason the report should not contain an impression but only your signature at the conclusion of it. Remember, however, the fact that you have a license to practice medicine bestows upon you the title of "expert witness"<sup>6, 7</sup> in the eyes of the law, and in this capacity your opinion may be requested as to the proper conclusion from the facts presented.

### Conclusion

Take the greatest possible care in the evaluation of these cases for, as a rule, the case is decided upon the medical evidence.

### References

1. Smith, Sidney and Fiddes, F. S.: *Forensic Medicine*. J. and A. Churchill, Ltd., Ed. 10, London, 1955.
2. Gonzales, T. A., Vance, M., Helpern, M., and Umberger, C. J.: *Legal Medicine, Pathology and Toxicology*. Appleton-Century-Crofts Inc., Ed. 2, New York, 1954.



3. Smith, Sidney and Simpson, Keith: *Taylor's Principles and Practice of Medical Jurisprudence*. J. and A. Churchill and Company, London, 1957.
4. Ellis, H. D.: *Recovery of Spermatozoa From Semen Stains*, *Am. J. Clin. Path.* 34:95, 1960.
5. Kaye, Sidney: *Acid Phosphatase Test for*

*Identification of Seminal Stains*, *J. Lab. & Clin. Med.* 34:728, 1949.

6. Regan, Louis: *Doctor, Patient and the Law*. C. V. Mosby, Ed. 3, St. Louis, 1956.

7. Tracy, J. E.: *The Doctor as a Witness*. W. B. Saunders, Philadelphia, 1957.

**SENSING THE NEWS.** By Thurman Sensing, Executive Vice President, Southern States Industrial Council.

**DOCTORS FOR FREEDOM**

A signal victory over socialism was won in mid-July when the Kennedy administration's medicare program was defeated in the U. S. Senate by a coalition of conservatives in that body.

But perhaps it would be more accurate to say that the socialized medicine bill was defeated by a conservative coalition in the country as a whole. For the real victory was one achieved by an uprising of popular indignation against increased government control of medical care—a type of care that experience in Great Britain has conclusively demonstrated to be bad for the patient and ruinous to the profession of medicine. The sick are subjected to bureaucratic procedures in England; medical men find the restrictions and deadening quality of socialized medical services so repressive that they are leaving the country for better posts overseas.

Credit also must be given to the physicians of the United States who spearheaded the fight against the Kennedy medicare bill. They accurately diagnosed the temper of the public and the ills of the legislation proposed by the New Frontier. Indeed it is a fact that more and more medical men of the country are taking the lead in the fight against socialism. Find a conservative group in an American community and invariably you will find a vigorous group of doctors who clearly see the threat posed by the collectivist schemes of the leftwingers now in control in Washington. It should be noted, for instance, that it was a doctor who first became suspicious of the activities of Billie Sol Estes. Doctors have been prominent in developing anticommunist education programs and seminars in all parts of the country.

This is not surprising, really, for doctors are men who are trained to discriminate between fact and myth, between health and illness. In almost every community they bear a heavy burden of personal and civic responsibility. Thus, as the socialist threat increases in America, it is only natural that doctors—who so often are real lead-

ers—should move out into the public arena in support of conservative government.

This is true in other countries. In Saskatchewan, Canada, for example, doctors staged an anti-socialist strike against the worst kind of government regulation of medical care. The Saskatchewan law, put into effect by a socialist provincial government, gave the government the right to pass regulations governing "any aspect of medical care." The Minister of Health declared that the doctors were to become paid civil servants—bureaucrats, in other words. Total government control of medicine, including the pay of doctors, was decreed by the province.

For what may be the first time in the history of North America, the forces of freedom rose up against the forces of state socialism.

Heretofore, anti-socialists have not gone beyond public protests and advertising campaigns or statements of opposition before legislative bodies. But the Saskatchewan doctors knew it was too late for mild protests. Like free men, they decided they would not practice medicine under the compulsions ordered by the government. This doctors' strike aroused the interest of all of North America. And it was only right that this happened, for the resistance of the doctors to state socialism is one of the most encouraging developments on this Continent in a generation. It demonstrates that socialism is not inevitable and that anti-socialists can stand up for what they believe is right and win wide public support.

Indeed sentiment in Saskatchewan clearly is behind the doctors, not the bureaucrats. The doctors there have the will to win for freedom. They are a proud example to embattled conservatives in both Canada and the United States. The strike has now been settled, but the doctors gained most of their demands, thus evidencing the fact that anti-socialists can win if they have the will to win, and that the people will back them up. Even so, the settlement is still a step down the road toward socialism, and we must be alert lest the socialist camel also gets his head in the tent of medical care here in this country. (*From Southern States Industrial Council, Nashville, July 29, 1962.*)

These two cases beautifully point up the generalized symptoms which may represent hyperparathyroidism. This emphasizes the need for its consideration in the differential diagnosis upon occasion.

## Hyperparathyroidism: Report of Two Cases

DONALD W. BALES, M.D., Kingsport, Tenn.

The main problem in hyperparathyroidism is case finding. Since it is a relatively rare disorder (20 years of active search accumulated only 100 cases at both the Mayo Clinic and the Massachusetts General Hospital),<sup>1</sup> investigation of patients with certain clinical leads is more apt to be rewarding than surveys.<sup>2</sup>

Hypercalcemia offers an important clue. Hypercalcemia should be thought of in cases having unexplained anorexia, weakness, fatigability, difficulty in swallowing, nausea, vomiting, constipation and hypotonicity of muscles and ligaments. The QT interval of the electrocardiogram may be shortened, and the slit-lamp of the ophthalmologist may reveal hand keratopathy and conjunctival crystals.<sup>1</sup> The finding of hypercalcemia arouses suspicion of hyperparathyroidism, but hypercalcemia can also be found in other conditions, such as hypervitaminosis D, Boeck's sarcoid, multiple myeloma, metastatic malignancy, and less commonly in the post-adrenalectomy state, rapidly developing osteoporosis and prolonged and excessive ingestion of milk and alkali. These must be considered and ruled out.<sup>3</sup>

Renal stones or calcification or polyuria may also provide a suspicion of this disorder.<sup>4</sup> This approach led to the discovery of many of the cases found in the decade of the 1930's.<sup>3</sup>

The bone disorder, rare in this country, presumably due to the high milk intake of Americans, can be suspected by the loss of the lamina dura about the teeth, subcortical bone resorption, and the presence of cysts and brown tumors, especially epulis of the jaws.<sup>1</sup> This avenue led to finding of some of the European and American cases in the late 1920's.<sup>1,3</sup>

Gastrointestinal symptoms have more recently been helpful in leading to the diagnosis of hyperparathyroidism.<sup>3</sup> Peptic ul-

ceration, especially if resistant or intractable, has also been helpful in this regard.<sup>5</sup>

The cause of hyperparathyroidism is hyperfunction of parathyroid tissue due to one of the following: single or multiple adenomas, carcinoma, or primary hypertrophy and hyperplasia of the parathyroid gland. Common to all these is increase in urinary phosphorus excretion, decrease in serum phosphorus (in absence of renal failure), increase in serum calcium and increase in urinary calcium. The serum alkaline phosphatase is elevated when the bones are affected.

Although hyperparathyroidism is rare, the search for it is well worthwhile since treatment in the early stages results in cure instead of renal failure and death—the common outcome in the untreated case.

I would like to report two cases seen at the Holston Valley Community Hospital to show the mode of case finding, the clinical and chemical findings before and after operation and to add them to the literature of the subject.

*Case 1.* This 58 year old white woman had had a partial hysterectomy and a cholecystectomy at other hospitals.

In 1951, when she was admitted to the Holston Valley Community Hospital for the first time, she was found to have irritability of the second portion of the duodenum. In 1953, she had a large ulcer crater in the duodenum. Later that same year she was again hospitalized because of upper abdominal and right upper quadrant pain, and vomiting thought to be due to a duodenal ulcer. In 1954, the patient was again hospitalized because of abdominal pain, nausea and vomiting due to a penetrating duodenal ulcer. The patient improved without operation. In 1955, the patient was again hospitalized for epigastric pain and vomiting, and with deformity of the duodenum but no evidence of active ulcer. After 4 hours there was 50% retention of barium in the stomach. The patient was treated medically and five days later a second barium study showed no obstruction and no intrinsic lesion.

The patient was admitted to the hospital because of upper abdominal pain, weight loss and



vomiting on July 24, 1957. The patient stated she had not felt well since the death of her husband in September; her aunt and her brother had also died recently. She had been nervous, depressed and unable to sleep, and said further that her upper abdominal pain became worse when she was nervous. The patient lacked energy and tired easily. She had had muscle weakness for 7 years but this had been still worse in the past 2 years; her health was last optimal in 1942. She had no heat or cold intolerance. She had had some swelling of her feet. Her appetite had been poor for four or five years. Nausea had been present for 10 years. There had been abdominal pain, distress, fullness and swelling at times. She had been constipated for almost all of her life but this had been worse since she had an operation in 1939. Her stools were harder than normal. The knees and calves had ached for the past two or three years. She had headaches, was frequently irritable and often was dizzy. She had had nocturia from two to seven times nightly and passed up to two quarts of urine at night for the past year. She had had dentures since 1950. She had never had any tumors of the gum. She usually drank about a quart of milk a day.

The temperature was 97, pulse 60, respiration 16 and blood pressure 150/90. There was some limitation of lateral bending and of rotation of the neck. There was a small nodule in the thyroid on the left. The lungs were slightly hyperresonant. Well healed lower midline and upper right rectus scars were noted. There was slight tenderness over the upper dorsal vertebra but the spine was flexible in all motions. Slight tremor of the outstretched hands was present. There was some limitation of abduction of the hip joints. The dorsalis pedis pulses were only slightly decreased. Motion of the knees produced considerable crepitus and there was some synovial thickening bilaterally with more pain being produced by motion on the right. The fundus of the uterus was absent.

The urinary specific gravity was 1.008; there was a slight trace of albumin, no sugar and 2 to 4 white cells. The N.P.N. was 42 mg. per 100 ml. Urinary calcium was normal once and increased once (18.3 mg. per 100 ml. of urine). Other chemistry reports were as follows:

X-ray examination of the stomach showed a constant marked deformity of the duodenal bulb with a questionable ulcer niche in the bulb. Cervical spine showed osteoporosis with some arthritic lipping into the foramina at the 4th and 5th level on the right with some narrowing of the 4th and 5th foramina on the left. Chest x-ray film showed a bilateral emphysema and fibrosis

and tortuosity of the aorta but no enlargement of the heart.

*Course.* On August 18, 1957, a neck exploration was done by Dr. James E. Shull. A thyroid adenoma was removed from the left pole of the thyroid, and a small yellow tumor was removed from the posterior aspect of the right lobe of the thyroid. The diagnosis was established as parathyroid adenoma by microscopic examination. (Fig. 1.)

The patient was interviewed again with special reference to possible symptoms related to the parathyroid adenoma. She now gave a history on direct questioning of having had, on several occasions in the past, slight pain radiating into the abdomen radiating into the genitalia which was crampy and severe but not prolonged. These symptoms suggested renal colic. She denied any deafness. She had had some tingling at night in the back of her legs which was relieved by rubbing. In 1942 she weighed 180 pounds and at the time of the operation she weighed about 140 pounds.

On September 20, 1957 the serum calcium was 10.7 mg. per 100 ml. and the patient was getting along fairly well, although she was still nervous, slept poorly and had a blood pressure of 150/105.

The patient was not seen again until the fall of 1958 when she consulted one of my associates because she seemed to be suffering from a current ulcer. The course was then followed, and in November, 1958, was put on chlorothiazide (Diuril) therapy for hypertension. The patient then developed a great deal of depression and anxiety and continued to have an elevated blood pressure. The stomach then improved, but in March of 1960 she developed swelling of her right hand, left side of the neck and left supraclavicular area with tenderness of the right metacarpal phalangeal joint. She was thought possibly to have gout and was put on probenecid (Benemid) and colchicine. She was not seen then until May 6, 1961 when she complained of pain in the abdomen, vomiting, swelling and extreme nervousness. She was thought to have an active ulcer. No stomach x-ray was done, however, nor has one been done since July of 1957.

*Case 2.* The second case was that of a 46 year old negress who was admitted to the Holston Valley Community Hospital on August 31, 1958, by a general surgeon with the diagnosis of a right renal calculus. The history obtained by the admitting doctor revealed that the patient had complained of back pain for about 2 weeks prior to admission and had then developed abdominal pain. She was found to have blood in the urine and was thought to have had a calculus which had

| Date     | Serum         |                | Calcium (mg.) | Phosphorus (mg.) | Alkaline Phosphatase |
|----------|---------------|----------------|---------------|------------------|----------------------|
|          | Albumin (Gm.) | Globulin (Gm.) |               |                  |                      |
| July 29  |               |                | 13.7          | 2.6              |                      |
| July 31  | 3.5           | 3              | 13.7          | 2.3              | 7 units              |
| Sept. 20 |               |                | 10.7          |                  |                      |

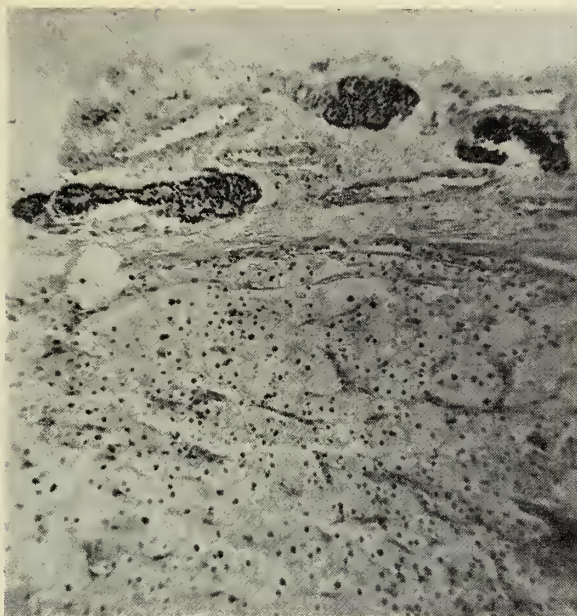


FIG. 1-A.

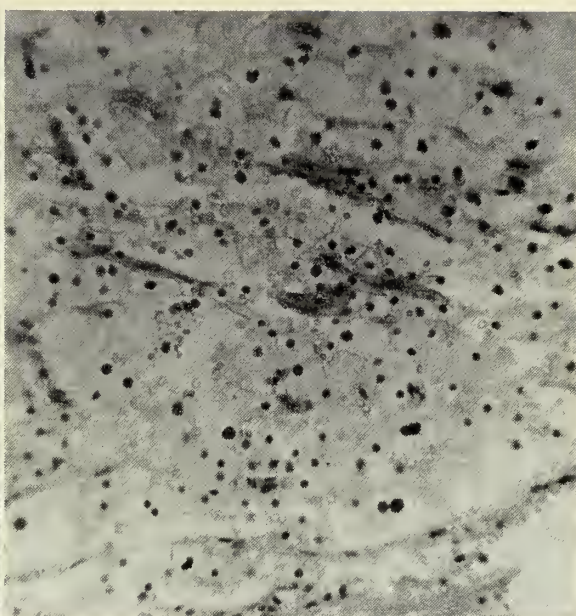


FIG. 1-B.

been passed, though, the stone was not obtained.

On October 5, 1958, I was asked to see the patient in consultation and at that time the chief complaint was pain in the left lower extremity which began in the medial thigh near the pubis and radiated all the way down the lower extremity. This seemed to be made worse by movements of the leg. The patient lacked "pep" and energy and she tired easily. She had been working until July when the present illness began. She had been short of breath and had been using two pillows at night, and had waked up at night short of breath. There had also been distress and pain in the chest and she had had some cough with sputum; some skipped beats had been noted. She had had abdominal pain and distress, belching, indigestion, fullness and swelling; the feces had been somewhat hard. The muscles ached and cramped, particularly in the left lower extremity, and the left hip joint was painful and stiff. There was also pain in the lower part of the back. She had been tense, nervous, jittery, restless, irritable, and depressed. Often there had been dizziness. She had also had numbness and tingling. She had had Nocturia of two or three times as well as pain on urination had been present, but she had no gross hematuria. She had a hysterectomy 2 years previously, immediately prior to which she had had her last period.

Examination revealed a colored woman who appeared to be moderately ill. There was prominence of the eyes, which she stated had been present all her life. The examination was not revealing except for a well healed midline scar in the lower abdomen with tenderness over the pubic bone on the left side medially. Attempts to move the left leg caused bitter complaints of pain.

*Course.* Review of the record prior to my see-

ing the patient revealed that she had complaints referable to her urinary tract during the early part of her stay. About the 6th of September she became critically ill with disorientation and pain in the left flank and fever, and was unable to take food or fluids. The patient was given nitrofurantoin (Furadantin), combiotic, chloramphenicol, tetracycline (Tetrex), methamphetamine mandelate (Mandelamine), sulfa methoxypyridazine (Kynex) and tetracycline a second time. The patient was put on Achtar jel beginning on the 27th of September. This was stopped on October the 7th.

The laboratory technician reported the urine to be loaded with red cells on admission. Cultures later grew a *Pseudomonas* although the initial cultures were negative. She developed a rather severe anemia which was not present on admission, also a neutrophilic leukocytosis. She also developed severe jaundice about the middle of September which improved.

Blood chemistry is shown in the following chart:

On October 17 exploration of the thyroid space was done and a parathyroid adenoma was removed by Dr. R. D. Doty. (Fig. 2.) The patient developed a *Pseudomonas* osteomyelitis of her left hip which needed to be drained and also had many subcutaneous abscesses of various parts of her body.

An interesting and important additional finding was the presence of enlargement of the sella turcica with erosion of the base. The findings were suggestive of a pituitary adenoma.

The patient finally recovered from her infection. The patient's case was reviewed in February, 1962, and at this time the vision was 20/20 in both eyes. The visual fields were normal and a skull x-ray showed some enlargement of the



| Date          | Albumin<br>(Gm.) | Globulin<br>(Gm.) | Calcium<br>(mg.) | Phosphorus<br>(mg.) | Alkaline<br>Phosphatase | Urinary<br>Calcium |  |
|---------------|------------------|-------------------|------------------|---------------------|-------------------------|--------------------|--|
| Preoperative  |                  |                   |                  |                     |                         |                    |  |
| Oct. 6        | 1.9              | 3.2               | 13.8             | 1.4                 | 11.1 units              | Slightly decreased |  |
| Oct. 7        |                  |                   |                  | 2                   |                         |                    |  |
| Oct. 8        |                  |                   | 12.4             | 4.8                 | 8.5 units               |                    |  |
| Oct. 9        |                  |                   |                  |                     |                         |                    |  |
| Oct. 11       |                  |                   |                  | 2.4                 |                         |                    |  |
| Oct. 17       |                  |                   | 12.4             |                     |                         | Normal             |  |
| Postoperative |                  |                   |                  |                     |                         |                    |  |
| Oct. 18       |                  |                   | 10.7             | 3.3                 |                         |                    |  |
| Oct. 20       |                  |                   | 10.1             |                     |                         |                    |  |
| Oct. 22       |                  |                   |                  | 3.4                 |                         |                    |  |
| Oct. 24       | 2.5              | 3.1               | 10.1             | 3.6                 |                         |                    |  |
| Jan. 1        |                  |                   | 9.6              |                     |                         |                    |  |
| Jan. 28       |                  |                   |                  |                     |                         |                    |  |

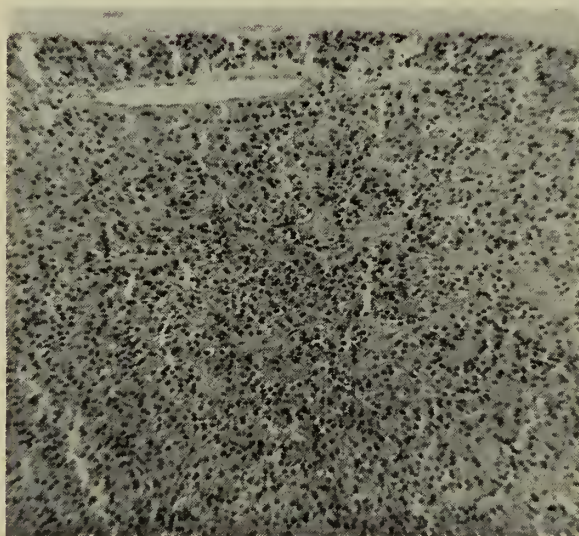


FIG. 2-A.

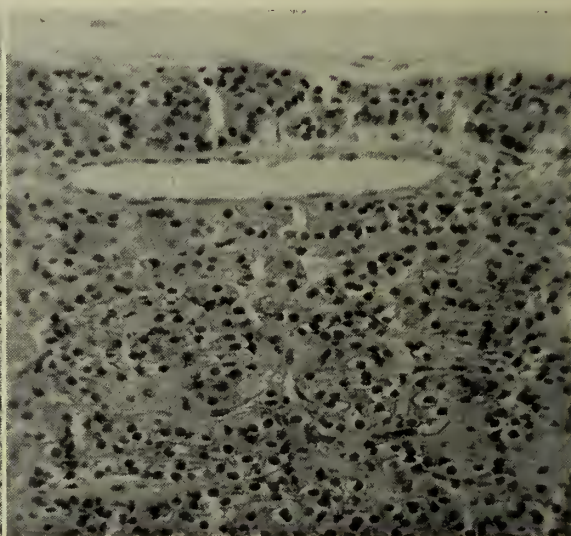


FIG. 2-B.

pituitary but at this time this was thought to be within normal limits. This would suggest that the original x-ray and neurosurgical opinion that the patient had a pituitary tumor may have been erroneous. At any rate the patient had gained a great deal of weight, and although she was complaining of a great deal of headache she had had so much emotional turmoil that it was believed that her headache might be on a tension basis and was relieved rather completely by Darvon compound 65.

### Summary

Two cases of hyperparathyroidism have been reported—one having osteoporosis and gastrointestinal complaints and the other a renal stone as the presenting complaints. As suggested by St. Goar it would be well to think of hyperparathyroidism as the "disease of stones, bones and abdominal groans" instead of "stones and bones" only.

Photomicrographs were made through the courtesy of Virgil Peek, Research Laboratory, Tennessee Eastman Company, Kingsport, Tenn.

### References

1. Cecil and Loeb: Textbook of Medicine, 9th Edition. Philadelphia, W. B. Saunders Co. (788-789, F. C. Barrter.)
2. Albright, F., Bauer, W., Roper, M., and Aub, J. C.: Studies of Calcium and Phosphorus Metabolism: IV The Effect of the Parathyroid Hormone, *J. Clin. Invest.* 7:139, 1929.
3. St. Goar, Walter T.: Gastro-intestinal Symptoms as Clues to the Diagnosis of Primary Hyperparathyroidism: A Review of 45 Cases, *Ann. Int. Med.* 46:102, 1957.
4. Cohen, S. I., Fitzgerald, M. G., Fourman, P., Griffiths, W. J., and de Wardener, H. E.: Polyuria in Hyperparathyroidism, *Quart. J. Med.* 26:423, 1957.
5. Wilder, William T.: Peptic Ulcer Disease in Hyperparathyroidism: An Analysis of 52 Cases. *Am. College of Physicians, 42nd Annual Session*, May 1961.
6. Black, B. M., and Zimmer, J. F.: Hyperparathyroidism With Particular Reference to Treatment: Review of 207 Proved Cases, *A.M.A. Arch. Surg.* 72:830, 1956.

The author summarizes a rather extensive experience with this method of diagnosing liver disease.

# Summary Of Recent Experience In The Diagnosis Of Liver Disease By Needle Biopsy\*

FRANCIS S. JONES, M.D., Knoxville, Tenn.

A 37 year old white man was admitted to the hospital because of an enlarged liver. A history and physical examination were recorded. Laboratory examinations including liver function studies were started. On the second hospital day a needle biopsy of the liver was performed.

This patient's history is not at all unusual at University Hospital in Knoxville. Because of this and because of the feeling that needle biopsy of the liver has become a very common procedure in our hospital, I thought it would be of interest to review all of our cases for the information that might be gained. It is apparent that our clinicians like this procedure as a diagnostic weapon. The brief history just given seems to be a good example of "Sutton's law."\*\* Whether or not it is good teaching for interns could be debated.

The University Hospital is a small general hospital occupied on the average by 210 patients, 55% of whom are private and 45% service. The total intern and resident staff averages 37. The Medical Service, which submits virtually all of the liver biopsies, averages 52 patients on the ward. The gastroenterology section is composed of one gastroenterologist, who is the most enthusiastic user of the needle biopsy as a diagnostic method. Residents and interns performed

many of the biopsies on indigent patients. The biopsies were examined by one of the two pathologists. Indications for the procedure were more difficult to define than the contraindications. The only important contraindications were, (1) markedly abnormal coagulation mechanisms, particularly an abnormally prolonged prothrombin time, and (2) an uncooperative patient. Long standing extrahepatic obstruction was not considered a contraindication. The review of the indications for the procedure was interesting in that many patients did not have jaundice, had livers of normal size and often with but few abnormal liver function tests. On the indigent service in particular, one cannot help but feel that needle biopsy was considered almost a part of a proper study of an interesting case.

The technic of the procedure need not be discussed. Most commonly a lateral transpleural approach was used. The procedure is not painful and, after proper preparation, takes just a few moments to perform.

There were 134 biopsies done on 128 patients. These were done in five and a third years since the hospital has been open. Note should be made of the rather small number

\*Presented at the meeting of the Tennessee Society of Pathologists, April 10, 1962, Memphis, Tenn.

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\*\*The term Sutton's law has been attributed<sup>1</sup> to Dr. William Dock. It recommends proceeding immediately to the diagnostic test most likely to provide a diagnosis, and deplores the tendency to carry out a battery of "routine" examinations in conventional sequence. The derivation of the term is as follows: When Willie Sutton, a hold-up man, was being interviewed by newsmen he was asked why he always robbed banks. Sutton, with some surprise, replied, "Why, that's where the money is."

Table I

A LISTING OF THE PATHOLOGIC DIAGNOSES

|                         |    |                              |     |
|-------------------------|----|------------------------------|-----|
| Normal liver            | 48 | Primary liver cell carcinoma | 2   |
| Fatty metamorphosis     | 18 | Focal granulomas             | 2   |
| Bile stasis             | 17 | Hemochromatosis              | 1   |
| Metastatic carcinoma    | 15 | Hemangiosarcoma,             |     |
| Portal cirrhosis        | 14 | primary                      | 1   |
| Infectious hepatitis    | 6  | Unsatisfactory specimen      | 1   |
| Nonspecific changes     | 3  |                              |     |
| Focal necrosis          | 3  |                              |     |
| Post-necrotic cirrhosis | 3  |                              |     |
|                         |    |                              | 134 |

of repeat biopsies. In this study all pathologic reports were reviewed and tabulated. In cases where the diagnoses or follow-up studies were not clear, charts were reviewed. All slides on specimens with canalicular stasis were reviewed.



The biopsies which contained metastatic carcinoma usually posed no diagnostic problem. Most were adenocarcinomas. Some were undifferentiated and there were one or two squamous cell carcinomas. Often there was no liver tissue present in the specimen, only tumor. In one patient the carcinoma was found only when a second biopsy was done. Primary liver cell carcinoma was the diagnosis in 2 patients. One of these came to autopsy and the needle biopsy diagnosis was confirmed. The second patient expired without autopsy being permitted. However, in both instances I felt somewhat insecure in the diagnosis without the entire liver in hand.

Fatty metamorphosis was the most frequent diagnosis other than normal liver. Many of these lesions were mild or minimal. In some cases, however, the fatty metamorphosis was apparently an important lesion clinically. Not all patients were obese. Focal necroses were associated in 4 cases. The impression was gained that alcoholism was often a feature clinically. One patient was jaundiced and toxic, and had a prolonged illness with mental disturbance, but after many months recovered completely. A follow-up biopsy could not be obtained. The possibility of a toxic hepatitis was considered. It was evident that fatty metamorphosis was often not suspected clinically, and the liver biopsy was the only way to make the diagnosis. The BSP, test was sometimes the only abnormal liver function test.

Because of the clinical interest in making the correct preoperative diagnosis of extrahepatic biliary obstruction, we reviewed as a group all cases in which bile canalicular stasis was a principle feature. There were 14 cases with 17 biopsies. A review of their charts gave the following breakdown as to probable etiology of the canalicular stasis. (Table 2.)

Table 2

| BILE CANALICULAR STASIS (14 CASES) |   |                |   |
|------------------------------------|---|----------------|---|
| Obstruction                        |   | No Obstruction |   |
| Cancer of common duct              | 3 | chlorpromazine | 2 |
| Cancer head of pancreas            | 1 |                |   |
| Stricture of ampulla               | 1 | Indeterminate  |   |
| Choledochal cyst                   | 1 | No follow-up   | 4 |
| Metastatic cancer                  | 1 | Follow-up      | 1 |
|                                    | 7 |                | 7 |

Six patients underwent an operation upon the biliary tract. Two of the patients with bile duct carcinoma came to autopsy. Three of the patients had no follow-up and biopsy may have served only to complicate the clinical picture. One patient was cured of jaundice when needle biopsy showed no hepatitis, and operation resulted in repair of the previously unsuspected congenital choledochal cyst.

A biopsy on another patient showed canalicular stasis and no evidence of infectious hepatitis. Subsequent operation revealed no stones or obstruction of the duct. In this case I still believe there was obstruction of the duct and the surgeons feel insecure in any diagnosis; the patient is happy since his jaundice cleared up following the exploration of the common duct. One patient had severe bile stasis due to carcinoma of the common duct and other changes were present which suggested biliary cirrhosis. Continuity of the biliary tract was re-established by a Whipple procedure, but the patient expired postoperatively. At autopsy the changes in the liver were insufficient to support a diagnosis of biliary cirrhosis.

Another diagnostic error was the case of hemangio-endothelial sarcoma probably due to thorotrast which was not recognized on needle biopsy, and the correct diagnosis was made only at autopsy. In this instance the unfamiliarity with the lesion was the principle reason for not recognizing the tumor in the needle biopsy.

Of all 17 biopsies with canalicular stasis which were reviewed, there were bile "infarcts" in only 2 biopsy specimens (1 patient). In the other 6 cases, which proved duct obstruction, there were no bile lakes or bile "infarcts"—only canalicular stasis. Thus it appears that if one awaits extravasation of bile to make the diagnosis of obstruction, one will miss many cases with some degree of obstruction.

Some explanation should be offered for the very low incidence for "unsatisfactory biopsy." We, the pathologists, tended to render a morphologic diagnosis on each specimen submitted. Often the only diagnosis which could be offered was "liver tissue" or "normal hepatic tissue." Perhaps many of these specimens so diagnosed were in reality unsatisfactory specimens. How-

ever, there was often some clinical value in the knowledge that the liver specimen was normal. In one such patient this information helped lead to a diagnosis of portal vein thrombosis.

There were only two complications in the 134 biopsies. One patient obstructed by a carcinoma of the common duct had a localized bile peritonitis which was drained surgically. The patient with hemangio-endothelial sarcoma bled into the peritoneal cavity and required 1 unit of blood, but bleeding did stop without resort to surgery.

*In summary*, this series is really too small for any statistical conclusions. However, a number of impressions were derived and some of these are as follows.

(1) Needle biopsy was the only way to establish a diagnosis of fatty metamorphosis. It was the only way to distinguish between early cirrhosis and severe fatty metamorphosis.

(2) Needle biopsy was often the easiest way to establish a tissue diagnosis of carcinoma involving the liver.

(3) Difficulty was encountered in differentiating morphologically portal cirrhosis

from posthepatic cirrhosis. The clinical history was relied upon almost entirely to make this distinction.

(4) Bile canalicular stasis was found to be by itself not diagnostic of extrahepatic obstruction, and bile "infarcts" occurred infrequently. Fifty percent of patients with canalicular stasis had extrahepatic obstruction.

(5) The alkaline phosphatase was evidently one of the most helpful clinical laboratory tests as far as evaluating duct obstruction was concerned. A value over 40 King-Armstrong units was usually associated with obstruction.

(6) Clinical information in detail must be submitted with each biopsy. This is to educate the pathologist and clinician as well. The biopsy alone cannot be relied on to give all the information as to the diagnosis. It should be regarded as simply another important diagnostic method to be used judiciously.

#### References

1. Petersdorf, R. G., and Beeson, Paul B.: Fever of Unexplained Origin: Report on 100 cases, *Medicine*, 40:1, 1961.

#### ABDOMINAL AORTIC ANEURYSMS. A REAPPRAISAL. By Irwin J. Schatz, John F. Fairbairn II, and John L. Juergens; *Circulation* 26:2, 1962.

This study of the records of 137 patients with abdominal aortic aneurysms considered to be due to arteriosclerosis, covers the period 1950 to 1960, during which time the surgical treatment of this lesion has become widespread. The average age at diagnosis was 67.8 years; 82% were men and 18% were women. Nine patients complained of back or abdominal pain. One of these noted a pulsating mass. 132 had no symptoms attributed to an aneurysm. None of the patients were operated on for one reason or another; 89.6% survived one year or more; 52% survived 3 years, and 36.4% survived 5 years after diagnosis. This indicates a better prognosis in this condition than previously reported. Prognosis of patients with

associated cardiovascular disease is definitely worse than that of patients without such a disease. Patients with abdominal aortic aneurysms and associated cardiovascular diseases are more likely to die of cardiovascular complications than of ruptured aneurysms. Patients with abdominal aortic aneurysms who have no evidence of associated cardiovascular disease are more likely to die from a ruptured aneurysm than from anything else. It would appear that small asymptomatic abdominal aortic aneurysms in patients with associated cardiovascular disease may be carefully observed until signs of expansion of the aneurysms or symptoms from the aneurysm appear. Decision for or against surgical treatment should be on an individual basis and not by arbitrary rules. (Abstracted for the Middle Tennessee Heart Association by Russell D. Ward, M.D., Nashville.)



Endotoxin from gram-negative organisms may be lethal. The guarded surgical approach, supportive measures indicated, and potential newer treatment have been outlined in this paper.

## Bacterial Endotoxin Shock. Current Concepts of Diagnosis and Treatment\*

THOMAS JACKSON, M.D., and ROGER SHERMAN, M.D.,† Memphis, Tenn.

It is generally recognized that symptoms in various infectious diseases result from the response of the body to toxins produced by the offending organisms. Gram negative bacteria, including many "nonpathogenic" intestinal organisms, contain potent endotoxins which can produce a syndrome characterized by cardiovascular collapse, frequently referred to as septic shock. Injection of pure endotoxin from *Escho coli*, *Pseudomonas*, *S. marcescens*, *Proteus vulgaris*, and other gram-negative intestinal organisms into laboratory animals promptly results in: (1) marked hypotension and tachycardia, (2) hyperpyrexia, (3) leukocytosis of 25,000 per cu. mm. or higher, and (4) anuria. Characteristically, anuria and hyperpyrexia persist, and death ensues despite artificial support of the blood pressure with vasopressors.

Although these phenomena have been well known to bacteriologists for many years, clinicians only recently have begun to associate severe shock, sometimes observed during the course of infections, with release of endotoxins into the circulation.<sup>1</sup>

Endotoxin shock in humans following transfusions of blood or plasma accidentally contaminated with gram-negative bacteria, is the best example of the effects of endotoxin alone without associated sepsis. Organisms flourish in the culture medium provided by bank blood, and liberate endotoxin from their cellular structure when they die and disintegrate. Shock, usually evident after as little as 25 to 100 ml. of blood has been infused, should not be mistakenly at-

tributed to transfusion of "incompatible blood."

The morbidity and high mortality associated with spontaneous rupture of intraperitoneal abscesses is due to spill and absorption of endotoxins. As long as the wall of the abscess cavity is unruptured, endotoxins within the abscess enter the circulation slowly because of the relative avascularity of the pyogenic membrane. Because of the slow rate of absorption the patient only shows signs of generalized toxicity. However, spontaneous rupture, or careless operative drainage, resulting in a spilling of endotoxins into the general peritoneal cavity where they are rapidly absorbed, produces prompt onset of shock.

Death from shock associated with a gangrenous intestine is thought to be due to absorption of endotoxins which have entered the peritoneal cavity by transudation through the wall of the devitalized bowel. Endotoxin shock may occur in patients with neglected soft tissue infections such as perirectal abscess, diabetic gangrene, leg ulcers, and burns. It is commonly observed as a terminal event in generalized peritonitis and septicemia due to gram-negative organisms.

Although sepsis is not uncommon, septic shock is rarely seen in children and adolescents. This may be due to more active and more abundant reticulo-endothelial elements which have been shown experimentally to be the site of endotoxin "detoxification."

### Treatment

Since there is no specific treatment for endotoxin shock, survival depends on supportive measures which: (1) decrease the amount of circulating endotoxin; (2) allow the general body defense mechanisms more time to detoxify the endotoxin; and (3) per-

\*Read at the meeting of the Tennessee Chapter, American College of Surgeons, April 10, 1962, Memphis, Tenn.

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mit the body tissues to better withstand the effects of the endotoxin.

A dependable route for intravenous therapy should be established with a large bore needle or polyethylene catheter. While septic shock is not primarily due to fluid loss, a moderate plasma volume deficit with hemoconcentration can occur, and this deficit should be replaced.<sup>2</sup> Physiologic saline is satisfactory for this purpose.

An indwelling urethral catheter will permit the urine output to be measured hourly. Anuria, unresponsive to adequate replacement of blood volume, has stimulated investigation of such agents as mannitol and hypertonic glucose which act as osmotic diuretics. A test dose of 12.5 Gm. of mannitol administered over a three minute period may be followed by diuresis, in which case, 25 Gm. would be given every four to six hours to maintain a urinary output between 50 and 100 ml. per hour.

Preliminary results of treatment of patients in septic shock with low molecular weight dextran have been encouraging.<sup>3</sup> Three mechanisms by which this substance may produce favorable results are: (1) expansion of blood volume, (2) osmotic diuresis, and (3) improvement of the suspension stability of erythrocytes with reduction of "blood sludging" in the microcirculation, which is thought by some to be responsible for the lethal effects of endotoxin.

Norepinephrine and other potent vasopressor drugs are frequently given to support the blood pressure.<sup>1</sup> Their value is open to question, and there is some reason to suspect that they may be harmful. Endotoxins produce severe vasoconstriction of renal and splanchnic arterioles, producing ischemic changes in the kidneys and intestine, which have been considered to be major factors in death from endotoxin shock.<sup>4</sup> Vasopressors intensify these effects. Since the level of systemic blood pressure does not necessarily indicate the state of capillary perfusion pressure, artificial support of the blood pressure with vasopressors should not lead the clinician into a false sense of security if anuria or oliguria persist.

Broad spectrum chemotherapeutic agents such as the tetracyclines should be given intravenously in large amounts (1 to 2 Gm. per 24 hours). Antibiotics have no effect on

circulating endotoxin, but can curtail multiplication of bacteria and subsequent production of endotoxin. Theoretically, bacteriocidal antibiotics could increase the amount of circulating endotoxin by killing large numbers of organisms, permitting the liberation of additional endotoxin.

Hydrocortisone given intravenously in doses of 500 to 1000 mg. apparently provides some protection against the toxic action of endotoxin, and enhances the ability of the tissues to tolerate the effects of endotoxin shock.

Since the metabolic requirements of tissues are reduced by hypothermia, treatment of septic shock by cooling may be a useful procedure. Evidence of detoxification of endotoxin within the body makes treatment directed toward protecting tissue cells from the effects of poor oxygen perfusion attractive. Blair and associates<sup>5</sup> report a 50% mortality in a series of 33 patients with septic shock treated with hypothermia. Hypothermia to 30 C. has been utilized in the treatment of septic shock at the John Gaston Hospital during the past three years. The results are difficult to evaluate because of the wide variation in age, etiology, duration of illness, therapy, and other factors which make case selection for valid statistical analysis impossible. Nevertheless, the clinical impression that hypothermia definitely contributes to survival in some patients, and prolongs survival in most patients is inescapable.

Studies in the University of Tennessee Surgical Research laboratories established that heparin provides considerable protection in dogs following the injection of endotoxin. When heparin was administered in doses of 2 mg. per kg. or higher, soon after the administration of LD<sub>100</sub> doses of endotoxin, 50% of the dogs survived. Clinical studies of the usefulness of heparin and dextran of low molecular weight for the treatment of septic shock in a small series of patients are encouraging.<sup>4</sup>

If supportive measures contribute to sufficient improvement in the patient's general condition, successful surgical intervention may be possible. Removal of gangrenous bowel, or careful drainage of an intra-abdominal abscess which threatens spontaneous rupture, can be life saving. However,



surgical intervention in the face of continued deterioration of the general condition due to septic shock has failed to contribute to survival, and is contraindicated.

### Summary

1. The release of endotoxins from gram-negative bacteria into the circulation results in a common syndrome characterized by high fever, tachycardia, hypotension, marked leukocytosis, and oliguria or anuria which may persist despite artificial blood pressure support.

2. Since no specific treatment is available for endotoxin shock, management depends on prompt recognition, supportive measures, and timed surgical intervention.

3. Common supportive measures include parenteral fluids, broad spectrum antibiotics hydrocortisone, and vasopressor drugs.

4. Newer adjuncts currently being evalu-

ated in the treatment of endotoxin shock include osmotic diuretics, dextran of low molecular weight, and heparin. Reduction of the metabolic requirements of the tissues afforded by hypothermia may allow general defense mechanisms additional time to detoxify the endotoxin.

### References

1. Altemeier, W. A., and Cole, W. R.: Septic Shock, *Ann. Surg.* 143:600, 1956.
2. Lillehei, R. C., and MacLean, L. D.: Physiological Approach to Successful Treatment of Endotoxin Shock in the Experimental Animal, *A.M.A. Arch. Surg.* 78:464, 1959.
3. Sherman, R. T. and Jackson, T. M.: Unpublished data.
4. Thomas, L.: The Physiological Disturbances Produced by Endotoxins, *Ann. Rev. Physiol.* 17: 467, 1954.
5. Blair, E., Buxton, R. W., Cowley, R. A. and Mansberger, A. R.: The Use of Hypothermia in Septic Shock, *J.A.M.A.* 178:148, 1961.

### OBJECTIVES AND PROGRAM OF THE AMA COMMITTEE ON NURSING.

*The continued achievement of high standards of patient care in the preventive, curative, and restorative aspects of illness depends upon a harmonious, collaborative relationship between medicine and nursing. In an effort to protect and foster an enduring alliance of understanding and cooperation between these 2 major health professions, the Committee on Nursing has instituted a continuing program of liaison, communication, education, and research. The Committee has authorized publication of the following report on its objectives and program.*

VERONICA L. CONLEY, PH.D., Secretary

"The program of the AMA Committee on Nursing is based on 3 general assumptions: (1) that nurses have a separate and distinct professional status and their contributions are those of co-workers; (2) that nursing should expect the medical profession to support and endorse high standards of nursing education and service; and (3) that each of the various levels of academic and technical accomplishment in nursing makes its

own unique contribution to the total health care of the public.

"On the basis of these broad assumptions, the Committee has adopted the following objectives:

"1. To expand and strengthen liaison activities between organizations representing the medical and nursing professions at the national, state and local levels.

"2. To study and report to the medical profession on current practices and trends in nursing and on developments among nursing auxiliary personnel.

"3. To stimulate, initiate, and where feasible, support research in areas pertinent to the nurse-physician relationship in professional practice.

"4. To offer advisory services to both professions on interprofessional matters.

"5. To provide support and assistance to the nursing profession and its nonprofessional auxiliary personnel in their efforts to maintain high standards.

"6. To encourage physicians to accept invitations to serve on nursing school faculties." (*J.A.M.A.* 181:430, 1962.)

## CLINICAL NOTES FROM THE TENNESSEE HEART ASSOCIATION

### RE-EVALUATION OF THE IMPORTANCE OF DIETARY CHOLESTEROL AS A CAUSE OF HYPERCHOLESTEREMIA

R. F. ACKERMAN, M.D.,\* Memphis, Tenn.

Cholesterol has been the center of the lipid theory of atherosclerosis for a number of years. The production of disease in laboratory animals using diets of a high cholesterol content first focused attention on this subject. Subsequently, the detection of high concentrations of cholesterol in atherosclerotic lesions were noted. More recently, isotope studies have shown that cholesterol which is ingested enters into plaques in a short period of time. In addition, many individuals with very high levels of serum cholesterol have been found to have widespread and premature atherosclerosis.

The prevailing opinion in recent years has been that dietary cholesterol is largely unimportant in human atherosclerosis. This is mostly based on several studies wherein the administration of 0.5 to 60 Gm. of crystalline cholesterol daily added to special formula diets caused no rise in either serum cholesterol or total lipid values.<sup>1</sup> This contrasted to the observation that the addition of 3 Gm. of cholesterol in the form of egg yolk powder to the diets of patients did cause an average increase of about 100 mg. per 100 ml. in serum cholesterol.<sup>2</sup> More recently, several investigators demonstrated that the addition to formula diets of cholesterol dissolved in butter distillate<sup>3</sup> or in olive oil,<sup>4</sup> caused significant increases in serum cholesterol levels in a few weeks. This apparent contradiction, wherein the feeding of as much as 60 Gm. of crystalline cholesterol produced no effect on the blood cholesterol whereas cholesterol in the form of egg yolk or dissolved in such common dietary items

as olive oil or butter did cause elevation of the serum cholesterol, appears to be explained on the basis of whether or not the cholesterol was administered in a manner that rendered it absorbable from the gastrointestinal tract.

While studying the effect of different dietary regimens on serum cholesterol levels in our laboratory, we made strikingly similar observations in dogs.<sup>5</sup> In normal dogs on a low-fat, low-cholesterol chow diet, the serum cholesterol averages about 155 mg. per 100 ml. When the fat in the diet is increased, there is generally some increase in the serum cholesterol. For instance, 30 Gm. of cocoanut oil causes a rise to 220 mg. while 30 Gm. of butter causes a rise to 260 mg. per 100 ml. When 2 Gm. of cholesterol and 30 Gm. of cocoanut oil are added to the chow diet, the average cholesterol in the serum rises to 285 mg. per 100 ml.; when 2 Gm. of cholesterol and 30 Gm. of butter are added to chow, the blood cholesterol averages about 345 mg. per 100 ml. These rises are comparable to those that occur in man when similar diets are fed. (See Table 1.) In

Table 1

AVERAGE SERUM CHOLESTEROL LEVELS ON VARIOUS  
DIETARY REGIMENS

|         | Control Diet* | High Fat Diets# |              |     |                  |              |     |
|---------|---------------|-----------------|--------------|-----|------------------|--------------|-----|
|         |               | Low Cholesterol |              |     | High Cholesterol |              |     |
|         |               | Olive Oil       | Cocoa-Butter | Oil | Olive Oil        | Cocoa-Butter | Oil |
| Dogs**  | 157           | 221             | 261          |     | 283              | 347          |     |
| Humans† | 234           | 213             |              |     | 271              |              |     |

\*Control Diet: Dogs—Purina chow; humans—regular hospital diet.

#High fat diet—formula diet

\*\*Ackerman, R. F. (5)

†Steiner, A. et al. (4)

dogs, when the amount of crystalline cholesterol is raised from 2 to 10 Gm., there is no further rise in the serum cholesterol. Thus, in both dogs and humans, serum cholesterol values are approximately doubled by ingestion of a high-fat, high-cholesterol diet as opposed to a low-fat, low cholesterol diet. Dietary cholesterol *can* elevate the serum cholesterol when it is dissolved in fat or oil, or emulsified by egg yolk lecithin or detergents like Triton.<sup>6</sup> Apparently, any excess of cholesterol over 1 to 30 Gm. of butter or oil is handled like crystalline cholesterol and is not absorbed from the gastrointestinal tract.

This unique fact explains a paradox

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Supported in part by grants from the Memphis and Tennessee Heart Associations and from the United States Public Health Service, Grant #HE-5356-03.



which has caused considerable confusion in the medical literature and which is just now being clarified. Obviously, dietary cholesterol is important in determining the level of the serum cholesterol. One must bear in mind, however, that the quantities of cholesterol used in the above experiments amounted to 2 to 3 Gm. daily, which represents an exceedingly high cholesterol intake. Dietary cholesterol generally averages about 1 Gm. daily, and only exceptionally amounts to as much as 2 Gm. However, the amount of butter or other fat available in the diet commonly runs in the neighborhood of 50 to 100 Gm. Therefore, it might be stated that all cholesterol taken by mouth in the average human diet should be available for absorption and might be expected to have some effect on the serum cholesterol level. When corn oil is substituted for olive oil in the diet formulas mentioned previously,<sup>2</sup> the serum cholesterol rises, but the degree of elevation is not so great as is noted with olive oil. This fits in with the observation that corn oil has a beneficial effect in reducing serum cholesterol levels whereas olive oil has no effect. Not only the amount of cholesterol but also the total amount and type of fat in the diet, including the ratio of unsaturated to saturated fats, profoundly affect the serum cholesterol. A re-assessment of diets designed to lower serum cholesterol in humans appears to be in order.

Taylor and his associates,<sup>7</sup> have been reporting on a number of experiments, studying cholesterol metabolism in rats, dogs, monkeys, and man, which show that great species differences exist. They indicate that some of our concepts, which minimize the importance of dietary cholesterol in causing hypercholesterolemia, will need to be modified. Repeated studies have demonstrated that when diets low in cholesterol are fed to rats and dogs, the liver is the major and practically only source of serum cholesterol. The same studies also demonstrate that the rapid suppression of endogenous cholesterol synthesis after cholesterol ingestion is almost entirely due to the effect on the liver. These experiments were based on *in vivo* measurements of the uptake of labeled acetate into plasma cholesterol. Results from human studies have been different. *In vitro*

tissue studies on patients undergoing elective surgery indicated human liver had a low rate of cholesterol synthesis. Subsequently, uptake of labeled acetate into plasma cholesterol in humans failed to reveal any significant consistent suppression of acetate uptake by a cholesterol rich diet. This likewise is interpreted to be in accord with the concept of liver being a minor source of plasma cholesterol in humans. The same technic simultaneously applied to dogs yielded strikingly different data, inasmuch as 90 to 95% suppression of acetate uptake was obtained by cholesterol feeding. A third most revealing experiment again demonstrated this marked difference in the pattern of cholesterol metabolism in humans and in dogs. Both species were fed cholesterol rich diets labeled with C<sup>14</sup> cholesterol, using egg yolk as the natural vehicle. Sufficient cholesterol was present to completely suppress hepatic cholesterol synthesis. Radio assay of serum showed that only one-fourth to one-third of the serum cholesterol was coming from the diet. Presumably, then, two-thirds to three-fourths of the plasma cholesterol in human subjects was derived from cholesterol synthesis in extra-hepatic tissue. In similar experiments with dogs, the dietary cholesterol rapidly replaced as much as 90 to 95% of the plasma cholesterol; endogenous sources accounted for only five to ten percent of the total plasma cholesterol. Thus, this technic confirmed previous studies in dogs in which the liver was found to be the normal major source of plasma cholesterol; it also confirmed the recent studies in humans which demonstrated an apparent species difference between the human and the dog. These three types of experiments support the concept that in man the liver supplies only a small part of the plasma cholesterol, the extra-hepatic tissues supply the major part, and diet is capable of supplying a significant part, up to one-fourth or one-third of the total amount. This fact may explain why cholesterol inhibitors, in order to be effective in lowering human cholesterol, must act in extra-hepatic tissue rather than primarily in hepatic tissue.

This entirely different experimental approach, namely, tracing labeled cholesterol from diet to plasma while using a high-fat,

high cholesterol diet to suppress hepatic synthesis of cholesterol has indicated that a difference may exist between the sources of plasma cholesterol in humans and in rats and dogs. Therefore, the earlier assumption that dietary cholesterol is of no importance in maintaining a high level of serum cholesterol in humans might be based on an erroneous concept derived from animal studies. Since dietary cholesterol can replace the amount of plasma cholesterol normally synthesized by the liver in humans as well as in dogs and since the human liver manufactures about one-fourth to one-third of the total amount of cholesterol in blood, the amount of dietary cholesterol that is safe for one to ingest daily without further elevating the serum cholesterol should be around 300 mg. or certainly not over 600 mg.

Observations mentioned in the opening paragraphs of this discussion show that dietary cholesterol, properly dissolved and available for absorption from the gastrointestinal tract can cause a considerable elevation of the serum cholesterol. Taylor and associates<sup>7</sup> show that the desirable daily dietary cholesterol is less than 600 mg. Results of these two different approaches reaffirm the importance of dietary cholesterol in maintaining elevation of the serum cholesterol. Since the types of fats and oils in the diet are also important in determining the amount of cholesterol absorbed and how

high blood levels will go, this aspect of diet must also be considered. Likewise, the total quantity of fat is important because the solubility of cholesterol in fats and oils is generally in the ratio of 1 to 30 Gm. Therefore, diets containing a large amount of fat will allow the absorption of a much larger quantity of cholesterol than is necessary to suppress and replace liver synthesis in humans.

It is to be hoped that these observations have shed some light on the question: "How much cholesterol should one recommend in the diet?" Whether or not patients will live longer and have less atherosclerosis as the result of dietary control is still not proven, and remains an entirely separate facet of the problem which cannot be covered in this discussion.

#### References

1. Keys, A. et al.: Diet and Serum Cholesterol in Man; Lack of Effect of Dietary Cholesterol, *J. Nutrition*, 59:39, 1956.
2. Steiner, A., and Domanski, B.: Dietary Hypercholesterolemia, *Am. J. M. Sc.* 201:820, 1941.
3. Beveridge, J. M. R., Connell, W. F., Mayer, G. A. and Haust, H. L.: The Response of Man to Dietary Cholesterol, *J Nutrition* 71:61, 1960.
4. Steiner, A., Howard, E. J. and Akgun, S.: Importance of Dietary Cholesterol in Man, *J.A.M.A.* 186:102, 1962.
5. Ackerman, R. F.: Unpublished data.
6. Paolett, R., Paoletti, P., Garattini, S.: *Chem. Abstracts*, 55:7593, 1961.
7. Cox, G., and Taylor, B.: Cholesterol Synthesis, Diet and Species, *Illinois M. J.* 3:118, 1960.



## STAFF CONFERENCE

### Vanderbilt University Hospital\*

#### Ochronosis

DR. DAVID E. ROGERS: This morning we are going to have presented a very interesting and unusual patient who has been studied carefully on our wards. Dr. Charles Dobbs will tell us about this patient.

#### DR. CHARLES DOBBS:

*Present Illness.* This 47 year old white male farmer first presented to the Vanderbilt University Hospital Outpatient Department in 1955 complaining of fainting on two occasions. Evaluation of his fainting spells revealed striking anxiety and no organic explanation of the spells. However, at that visit he gave a history of lifelong dark urine at the first voiding each day, but clear urine at other times. Also at that visit he gave a history of arthritis involving both knees and his back for the previous 5 years.

The original physical examinations contained no mention of any of the stigmas of alcaptonuria. However, 2 months later the patient's older brother entered Thayer Hospital with classical alcaptonuria and ochronosis. His brother gave a history similar to that of our present patient. One other brother had many of the same findings. The house staff worked up all 3 and confirmed the classical physical findings and the presence of homogentisic acid in the urine of all. X-ray studies confirmed the classical picture of ochronosis in the spine of this patient.

The patient was lost to follow-up until Oct. 19, 1961, when he returned complaining of severe arthritis which prevented his pursuit of farming. Examination revealed left scoliosis, evidence of herniated nucleus pulposus, and increased pigmentation of his ears and nose. Salicylate therapy and flexion exercises had given only partial relief of symptoms. Check of his family revealed that his paternal grandparents had the same last name, but their relationship could not be defined.

*Physical Examination.* This revealed the vital signs to be within normal limits. The patient walked with a stiff back, hip flexed, with the trunk leaning forward, and a slight limp. The insertions of the ocular muscles to the sclerae were pigmented. The outer rim of the ears presented a blue-black color when viewed from the front, and there was a nodularity to touch. Across the bridge of the nose was a striking bluish-black pigmentation best seen in subdued light. There was loss of mobility of the spine and lumbar scoliosis. Both knees were crepitant on motion, and lateral to the right knee was a firm, movable 1 cm. nodule. The remainder of the examination was normal.

\*From Department of Medicine, Vanderbilt University School of Medicine, Nashville, Tenn.

*Laboratory Studies.* Hematologic studies were within the limits of normal. Routine urinalysis was normal except for a 1+ reaction for reducing substance (Benedict's test). Addition of alkali to the urine resulted in darkening from the surface downward (Fig. 1). Latex fixation test was

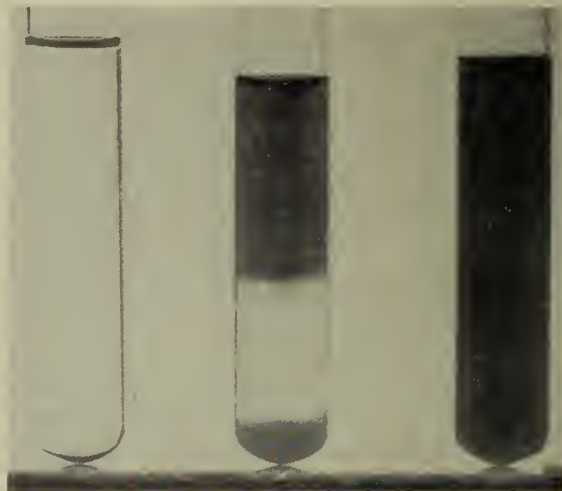


FIG. 1. The tube on the left contains freshly voided urine from the patient. The middle tube contains the patient's urine to which a few drops of NaOH have been added and allowed to stand a few minutes. The tube on the right is alkalinized urine from the patient which has been standing for over an hour.

negative. Uric acid was 4.1 mg. per 100 ml. X-ray examination of the spine revealed calcified intervertebral discs in addition to the obvious scoliosis (Fig. 2). Films of the left knee showed calcification of a tendon just lateral to the patella and a small intra-articular calcification (Fig. 3). Special x-ray films of the ears revealed calcium deposits in the helix (Fig. 4).

DR. ROGERS: Thank you, Dr. Dobbs and now I know we would like to hear about this rare disease from Dr. Snell.

DR. JAMES D. SNELL, JR.: Alcaptonuria is a rare hereditary metabolic disease in which the metabolite homogentisic acid accumulates and is excreted in the urine. Although medical reports of people excreting black urine occur as far back as the 16th century, it was in 1859 that Boedaker carefully examined the urine of a patient with reducing qualities differing from glucose. He found that it reduced copper but the supernatant remained a brownish-black color, and that addition of alkali resulted in a black color. It was he who named the condition alcaptonuria. Wolkow and Baumann in 1891 isolated and identified homogentisic acid as the abnormal metabolite in urine of patients with alcaptonuria, and suggested that it was related to tyrosine



FIG. 2. Spine film showing scoliosis and calcified intervertebral discs

metabolism. In 1909 Garrod wrote: "We may further conceive that the splitting of the benzene ring in normal metabolism is the work of a special enzyme, that in congenital alcaptonuria this enzyme is wanting, whilst in disease its working may be partially or even completely inhibited. The experiments of G. Embden and others upon perfusion of the liver suggest that organ as the most probable seat of the change."

Meanwhile, in 1866 Virchow described ochronosis, a generalized pigmentation of the cartilages and connective tissues at autopsy. In 1902, Albrecht observed a patient with black urine who died of tuberculosis and at autopsy had ochronosis. Albrecht was the first person to suggest ochronosis is



FIG. 3. Left knee showing calcium deposits in a tendon just lateral to the patella and an intra-articular calcification.



FIG. 4. X-ray examination of the ear shows calcifications in the helix.

the result of alcaptonuria. Then in 1904, Osler put ochronosis into clinical medicine by describing a careful eight year observation of one patient with alcaptonuria who developed ochronosis. He also reported the case of the patient's brother who had



ochronosis. These were the first premortem diagnoses ever made of ochronosis. It was Osler who first noted the arthritic complaints in these two patients.

There is then a big gap in the progress of knowledge concerning alcaptonuria up to the period beginning about 15 years ago when extensive metabolic studies were begun to define the metabolic abnormalities in alcaptonuria. With the publication in 1958 of the studies of LaDu and his co-workers, the metabolic disturbance in alcaptonuria was precisely defined. They found no homogentisic acid oxidase activity in the liver of patients with alcaptonuria. Since then, LaDu has also demonstrated absent homogentisic acid oxidase in the kidney of alcaptonuric patients but not in normals.

The present thinking about metabolic pathways is diagrammed in figure 5 which shows the numerous important pathways which metabolism of the amino acid tyrosine may take. Alcaptonuria involves the

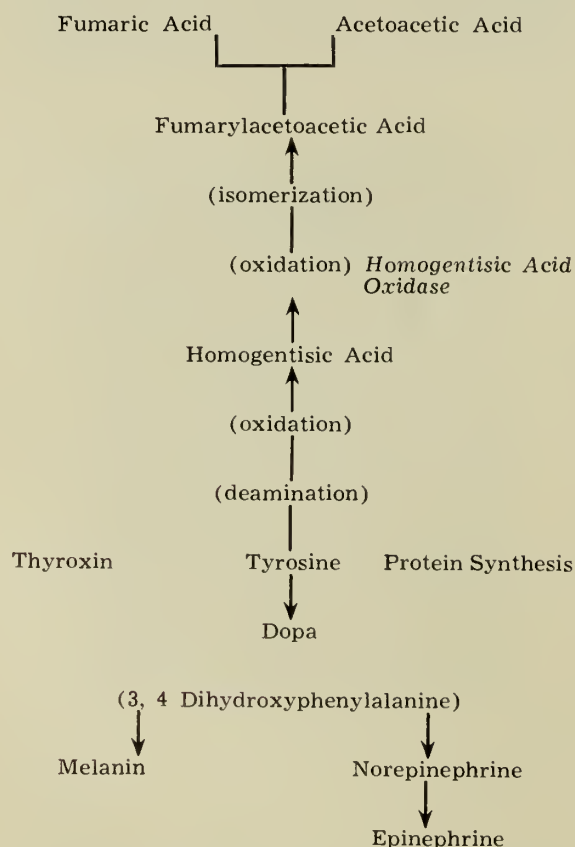


FIG. 5. Schematic representation of pathways of tyrosine metabolism pointing out the position of homogentisic acid and indicating the site of metabolic block in alcaptonuria.

degradation pathway through which the amino acid is converted into the energy sources fumaric acid (Krebs cycle intermediate) and acetoacetic acid (fatty acid synthesis, and oxidation to  $\text{CO}_2$  and water). The abnormality in degradation results from absence of an enzyme responsible for oxidation of homogentisic acid, so that this compound accumulates and is excreted in large amounts in the urine. By unknown pathways homogentisic acid forms a dark pigment which is deposited in all cartilages of the body.

The clinical features of this disorder may be seen in table 1. They are classically of

Table 1

#### CLINICAL FEATURES OF ALCAPTONURIA

- I. Urine—begins a few days after birth
  - A. Turns dark on standing or adding alkali.
  - B. Stains underclothing and axillary area of shirts black.
  - C. Causes reduction of copper sulfate—brown supernatant.
  - D. Turns photographic film black.
  - E. Transient blue color with ferric chloride.
  - F. Contains homogentisic acid on specific analysis.
- II. Pigmentation—begins as early as age 20 to 30 years.
  - A. Ears—also calcium.
  - B. Nose and malar eminences.
  - C. Insertion of recti muscles of the eye.
  - D. Axillae and groins dark when there is poor hygiene.
  - E. Tendons.
- III. Arthritis—begins in 30 to 50 years age group.
  - A. Limitation of motion of shoulders, hips, knees, and spine.
  - B. May develop acute inflammation.
  - C. Degeneration and calcification of i-v discs.
  - D. Osteoarthritic changes and calcified tendons on x-ray.

three types, urinary findings due to presence of homogentisic acid, pigmentation and arthritis. Homogentisic acid may be found in urine within a few days after birth. Consequently, a history of darkly stained diapers may be elicited in the pediatric age group. Quite characteristically the urine turns dark on standing, since ammonia producing bacteria cause sufficient rise in pH to speed up the pigmentary change of homogentisic acid. Alcaptonuria was first studied because of the reducing properties of homogentisic acid in the urine. In doing a test for sugar in the urine by reduction of copper sulfate, there is a precipitate such as when sugar is present, in addition to which there is blackening of the supernatant due to presence of homogentisic acid in an alkaline solution.

The abnormal pigmentation is seen in sites where cartilage has been stained by the dark pigment formed from homogentisic acid. This pigmentation varies from brownish-gray to bluish-gray when seen through intact skin. Sometimes calcium is deposited in areas where the abnormal pigment is located. Only cartilaginous structures are involved.

Arthritis is of a degenerative nature, producing complaints like those of osteoarthritis. The cause of the arthritis is felt to be damage to cartilage by the abnormal pigment. The exact mechanisms have not been worked out.

In the past when it was common to use carbolic acid compresses, rare patients with such compresses developed ochronosis, with typical dark deposits in all cartilaginous structures. Reportedly, this discoloration disappeared after carbolic acid compresses were discontinued. Occasionally, there is a superficial resemblance between the pigmentation of ochronosis and that of pa-

tients who have received atabrine for many months. These patients, however, do not have the abnormal urine findings of alcaptonuria.

As initially indicated, alcaptonuria is an inherited disorder. The mode of inheritance in all but a very few cases has been documented as autosomal recessive. Therefore, both parents must carry the abnormal gene and transmit it to the affected offspring. However, rare families seem to have a dominant mode of inheritance.

Treatment is limited to symptomatic measures for the arthritis.

DR. ROGERS: I regret that we do not have more time to discuss this fascinating subject.

#### References

1. Garrod, A. E.: *Inborn Errors of Metabolism*, 2nd Ed., London, Oxford Press, 1923, pp. 42-87.
2. Osler, William: *Ochronosis*. *Lancet*, 1:10, 1904.
3. Stanbury, J. B., Wyngaarden, J. B., and Fredrickson, D. S.: *Metabolic Basis of Inherited Disease*, New York, McGraw-Hill, 1960, pp. 394-427.



## President's Page



WILLIAM J. SHERIDAN,  
M.D.

In accordance with recognized authoritative information and recommendations then available, your Board of Trustees endorsed the implementation of a statewide program for mass inoculation of the Public with the oral type Sabin vaccine. Following this recommendation reports were released indicating that there seemed to be some question as to the possible relationship between the administration of the vaccine and the subsequent development of the disease due to the administration of it. On the basis of this later development, the Board immediately recommended that the program be held in abeyance until further information would justify the feasibility of its continuance.

Inoculation of the Salk vaccine on an individual basis is reported not to represent a factor in causation of the disease and its continued use is recommended.

The threat of encroachment of federal control and regulation of medical practice is an enduring one. Do not be lulled into complacency by success in past battles. Winning a battle does not constitute winning either a campaign nor a war. It does however serve to inspire confidence that the next conquest, and the next, can be brought to a successful termination through the medium of concerted effort. We are now in that quietude that precedes an ominous conflict. Our adversaries have openly announced that they intend to purge the Congress of those members who have opposed the type of legislation which is diametrically contrary to our concepts of freedom to practice that system of medicine which we conscientiously believe to be in the best interest of the public. We are just as determined to preserve this right as our adversaries are to destroy it. It is in our interest, but more especially to those who will succeed us, that third party intervention be kept at a minimum.

Be alert to seize upon every opportunity to discuss our position on matters pertaining to medical care not only with the public at large, but gain audience with your candidate for Congress for expression of your views. He will appreciate clarification of our stand on the current legislative issues.

The November elections are close at hand. It is your duty to redouble your efforts in supporting the candidate of your choice; to influence to the best of your ability those of your acquaintance to do likewise. Remember that it takes Votes at the polls on election day to win an election. A defeated candidate once aptly said, "I lost the election due to my host of friends who neglected to vote."

President

*William J. Sheridan, M.D.*

President

# THE JOURNAL

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OCTOBER, 1962

## EDITORIAL

### FATIGUE

This complaint usually expressed as "I am tired," "I have no energy," "I'm pepless," "I'm burned out," "I'm all washed out," "I've got low blood," but most frequently "I am tired," is almost an everyday mystery presented to the average practitioner.

Inasmuch as fatigue is a complex phenomenon in which functional as well as organic problems may be involved its solution requires caution and care. The lassitude is subjective and consequently the pattern of symptoms is frequently vague. Included are a feeling of inadequacy and inertia, a sense of heaviness, ill-defined discomfort and actual muscular weakness. Generally there are two patterns of fatigue, an unexplainable tiredness in the morning, even after a full and satisfactory night's rest and secondly, a weariness that in-

creases, impressively, as the day wears on.

A French investigator, Labroir<sup>2</sup> theorized that fatigue is the result of a metabolic insufficiency involving primarily the Krebs cycle. This group of investigators attempted to verify this theory by the use of a swimming test in rats. Various therapeutic agents were given to the experimental rat to see which compound might prolong the swimming time. The one agent which was most successful in this experiment was aspartic acid. Later the administration of compounds of aspartic acid to 144 athletes in training, in the French Army had a definite effect in lessening the occurrence of fatigue and expediting the training program in almost 90 per cent of the subjects. In this country<sup>3</sup> aspartic acid compounds were given to 2000 patients with a beneficial result in 80 per cent. The clinical results were correlated with rheotome studies of neuromuscular excitability. There were, therefore, both subjective and objective responses that could be analyzed. The objective evidence of improvement is indeed impressive.

There have been many methods and many medications that have been suggested in the past for use in the treatment of fatigue. These include vitamins, amino acids, stimulants, thyroid extract, androgens, estrogens, amphetamines, and the injection of procaine hydrochloride, to mention a few.<sup>1</sup> Perhaps aspartic acid compounds offer even more than these somewhat more speculative agents. None-the-less the results necessarily will be watched critically by those in practice who, in the past, have followed various unsuccessful therapeutic blind alleys in an attempt to relieve the symptoms of fatigue.

A. W.

### References

1. Shaw, D. L., Chesney, M. A., Tullis, I. Frank and Agersborg, H. P. K.: Management of Fatigue—A Physiologic Approach, Am. J. M. Sc. 243:758, 1962.
2. Labroir, H.: Stress and Cellular Function, J. B. Lippencott Co., Philadelphia, Pg. 76, 1959.
3. Agersborg, H. P. K. and Shaw, D. L., Jr.: Physiologic Approach to the Problem of Fatigue, Report to Valley Forge Medical Center, Oct. 1961.
4. Oury, P. and Duche, G.: La Procaine Action, Entropheque and Gerontologic, Presse med., 67: 2219, 1959.



## THE HOSPITAL AND IMPROVED MEDICAL CARE

The Committee on Hospitals of the Tennessee State Medical Association and the Tennessee Hospital Association are disturbed by the fact that only 56, or 27% of the 205 eligible Tennessee hospitals (25 or more beds) have been accredited by the Joint Commission on Hospital Accreditation. It is their hope that more hospitals will seek accreditation for this can mean only a better level of medical care for Tennessee's citizens.

Accreditation and its maintenance can be attained only when one or more of a hospital's staff have a sincere desire to improve medical care and at the expense of time and energy in the organizational efforts necessary. That there will be need for money cannot be denied. Adequate records and their filing, purchase of equipment and hiring of technicians to obtain dependable laboratory results, and providing equipment and facilities for visiting consultants in pathology and radiology cost money, but not in such excessive amounts as to preclude amortization by modest increases in charges to patients. What better expenditure and increased cost to the patient can one visualize!

The offer by the above Committee of teams consisting of a physician, hospital administrator and medical records librarian for consultation and advice, pointing to accreditation of a hospital is to be applauded with the hope that such offers will be accepted.

A resurgence of the desire by some of the profession to be of help to underdeveloped areas in medical attention is heart warming to those of us who were engaged in a similar effort a decade ago. The labors of the Tennessee Medical Foundation left their indelible mark upon medicine in the rural areas of east Tennessee in laying the foundation of better medical care. Pruden Valley, Wartburg, LaFollette, Palmer, Decatur, Tellico Plains, and Oneida—names reminding us of a bright chapter in the history of organized medicine in Tennessee, which led an official out of State to say of these activities, "It offers a graphic demonstration of the service that organized medicine is able to provide within its present framework."<sup>1</sup> Here was an experiment which

attracted national attention, through the energies of Tennessee doctors, their own dollars collected by the Woman's Auxiliary and money from U.M.W.A. and the Commonwealth Fund. (This grant by a philanthropic Fund to members of organized medicine was in itself a "first.") The Tennessee Medical Foundation gave advice upon request after surveys, as to the need of a clinic or of a hospital, assistance in the planning of a facility, its staff organization, and recruitment and organization of consulting services.

After some years of activity in the eastern part of the State, the Tennessee Medical Foundation hoped to stimulate requests for consultative advice in middle and western Tennessee. In his report to the House of Delegates in 1961, Dr. Harrison Shull, Chairman,<sup>2</sup> said:

"As reported last year the Foundation believes that one of the areas in which the practicing physician may at times find himself severely limited is in the lack of adequate and dependable ancillary and supportive services such as laboratory, x-ray and hospital administration. The strength of these services in a given locality may be affected by circumstances not always under the control of the physicians themselves, circumstances which may make the local physicians desirous of having consultative advice on these matters. In an effort to explore, on a pilot basis, the advisability and usefulness of such consultative service to a local medical community the Tennessee Medical Foundation has worked out with the Tennessee Society of Pathologists a plan to study the laboratory situation in a hospital in East Tennessee (Harriman) and in Middle Tennessee (Shelbyville) on the invitation of each of these hospitals. The plan also is intended to include a hospital in West Tennessee, but as yet there has not been an invitation from a West Tennessee hospital. This study is intended to be over a sufficient period of time to give a careful appraisal of needs and facilities for meeting these needs and to give whatever help is available and desired in meeting these needs. This study is to be concerned not alone with tissue work, but with clinical laboratory procedures as well."

And again in the report of 1962,<sup>3</sup> it was pointed out:

"That dependable and adequate diagnostic facilities such as laboratory services and x-ray diagnosis are essential to good medical care, and these are not always easy to establish and maintain in some of the smaller communities. Of comparable importance is good hospital administration. It was stated that the communities in need of advisory assistance in these fields may welcome a medium within our state association through which their requests for assistance may

be channelled to these professional groups who are best qualified and able to give expert advice in these fields, such as the members of the Tennessee Society of Pathologists, the Tennessee Radiological Society, the Tennessee Hospital Association.

"The report concluded by the Committee pointing out that it believed that the principles involved are good and are important in the accomplishment of the worthwhile purpose of the State Association to take the initiative in helping TSMA members to furnish the highest possible quality of medical care to patients. The Committee invited comments and suggestions concerning activities of the Tennessee Medical Foundation."

The suggestion of offering aid to small hospitals of western Tennessee came on the heels of a previous disapproval of some physicians of that area to a similar offer of assistance by the University of Tennessee College of Medicine through a U.S.P.H.S. grant. Nothing came of the later offer by the Tennessee Medical Foundation.

Patience is of the essence in the cultivation of new ideas and efforts. One can only hope that what Tennessee's doctors through its Tennessee Medical Foundation planted a decade ago to come to flower, then to wither, may again with some watering by renewed efforts continue to grow. It can result only in better medical care for Tennessee's citizens.

R. H. K.

#### References

1. Massie, Willman A.: Medical Services for Rural Areas, the Tennessee Medical Foundation, Cambridge, Mass., Harvard University Press, 1957.
2. Proceedings of the House of Delegates, J. Tennessee M. A. 54:190, 1961.
3. Proceedings of the House of Delegates, J. Tennessee M. A. 55:222, 1962.

★

#### HELP NEEDED—TO UNDERWRITE DOCTORS OF THE FUTURE

*The following information has reached us from the American Medical Association.*

A far reaching new program to guarantee loans for medical education is now under way in American medicine. Its goal is to help eliminate the financial barrier to the study of medicine for all who are qualified and accepted by approved medical schools or institutions for graduate education. This program is designed to provide a means of financing a substantial portion of the cost of a medical education.

The loan program for medical students, interns and residents is the result of a co-

operative effort by American medicine and private enterprise, and is administered by the American Medical Association's Education and Research Foundation. On the basis of this loan guarantee fund a bank will lend up to \$1,500 each year to students. The ERF, in effect acts as cosigner, and for each one dollar on deposit in its loan guarantee fund the bank will lend \$12.50.

More than 3,300 students, interns and residents have borrowed more than \$6,000,000 through this fund since it was started last February. Physicians and others have contributed almost \$700,000 to the loan guarantee fund, which makes these loans possible.

The guarantee fund is almost depleted and more money is needed immediately to keep up the loan program. Eventually it will become self-sustaining as loans are repaid, but right now substantial financial help is needed. Your check to the AMA-ERF, 535 North Dearborn St., Chicago, will help to keep this important program viable. Contributions to the Foundation are tax deductible.

(As of August 20, 1962, in Tennessee, 124 loans had been made to the amount of \$134,000 to medical students, and 19 loans to the amount of \$21,900 to house officers in hospital training.)

## DEATHS

**Dr. Jacob H. Bronstein**, 64, Memphis, died August 25th at Mt. Sinai Hospital in Miami Beach, Florida.

**Dr. Royden Simpson Gass**, 62, Nashville, died September 4th at Baptist Hospital. He was director of Tuberculosis Control of the Tennessee Public Health Department.

**Dr. Rex F. Hughes**, 61, Milan, died August 27th at the Jackson-Madison County General Hospital in Jackson.

**Dr. Charles E. Reeves**, 92, Gainesboro, died August 31st in the Jackson County Hospital.

**Dr. J. M. Cox**, 77, Lake City, died September 18th at his home.

## PROGRAMS AND NEWS OF MEDICAL SOCIETIES

**Roane-Anderson County Medical Society**

The Society presented its annual Dr. Dwight E. Clark Memorial Lecture on Oc-



tober 29th, 1962 at the Jefferson Junior School Auditorium in Oak Ridge. The speaker was Dr. Walter L. Palmer who spoke on the subject, "Mind, Emotions, and the Digestive Tract." Dr. Palmer is Emeritus Professor of Medicine of the University of Chicago, and he is presently coordinator of Cancer Training at Chicago.

The society presents the lecture annually as a public service.

### **Chattanooga-Hamilton County Medical Society**

The Society presented the annual Tennessee Valley Postgraduate Medical Assembly scientific meeting in September. The Assembly was conducted in the Read House on September 24-25.

A large number of physicians attended the meeting from twelve states and the essayists represented some of the nation's most outstanding physicians. These included among other notable doctors, Dr. Paul Dudley White, Harvard Medical School, Boston, Mass.; Dr. Charles W. Mayo, Mayo Clinic, Rochester, Minn.; Dr. John R. Heller, President, Memorial Sloan-Kettering Cancer Center, New York City; Dr. George Crile, Jr., Department of Surgery of Cleveland Clinic, Cleveland, Ohio.

Among the international essayists were: Dr. Hans Selye, Dr. Plinio Prioreschi and Theodore Rasmussen of Montreal, Canada.

### **Memphis-Shelby County Medical Society**

The Society met in regular session on October 2nd. The scientific program was entitled "Health Insurance as a Medical Director Sees It" by Dr. Paul V. Reinartz, Medical Director, The Prudential Insurance Company of America, Newark, New Jersey.

A meeting of the House of Delegates of the Society convened immediately following the scientific program.

### **Knoxville Academy of Medicine**

The Society conducted its regular meeting on September 11th in the auditorium of the Academy of Medicine Building. The program was presented by Mr. McAfee Lee, attorney, who discussed "Medico-Legal Problems Regarding the Workmen's Compensation Law." An interesting question and answer session followed the presentation.

## **NATIONAL NEWS**

### **The Month in Washington**

(From the Washington Office of AMA)

A special advisory committee reported to the Public Health Service that the occurrence of 12 cases of polio among persons who had taken 38 million doses of oral vaccine did not provide any ground for questioning the safety of the live-virus vaccine.

Reporting on the study by the advisory committee, Dr. Luther L. Terry, Surgeon General of the PHS, said: "Following administration of more than 38 million doses of oral vaccine, only 12 cases, outside of the epidemic areas, including five from Oregon, have been reported which had their onset of illness within 30 days of vaccination.

"Although the number was very small in relation to the number given vaccine and the diagnosis in certain of these cases seems questionable, I decided to call together members of my advisory committee to examine in detail the diagnosis, laboratory studies, and epidemiological circumstances relating to each of the cases.

"The group met on two occasions, on August 9 and 16, and after careful consideration of the facts, concluded that it was not possible to establish that the vaccine virus caused any of the cases. The advisers emphasized that polio viruses, as well as other viruses, are frequently present in the community and that it can be anticipated that occasionally poliomyelitis or illnesses simulating it may occur or following vaccination programs. Illness and injury completely unrelated to polio and naturally occurring cases or polio have continued and, no doubt, will continue to be attributed to the vaccines. Furthermore, it is well known and recognized that any effective medication administered to millions of persons will cause or appear to cause a number of side effects.

"The committee, in summary, urged the continuation of present and projected programs of immunization looking toward the final elimination of the disease."

As of August 11, the approximate midpoint of the polio season, 274 cases of paralytic polio had been reported. The total, of which 129 cases were in Texas where outbreaks of type I had been occurring, was

the same as for a comparable period last year.



Life expectancy at birth reached an estimated 70.2 years in the United States in 1961, according to the Public Health Service.

The estimate was based on a 10 percent sample of death records received by the National Vital Statistics Division from all the 50 states.

Deaths totaled about 1,702,000 in 1961—a rate of 9.3 per 1,000 population, only slightly higher than the record low rate of 9.2 for 1954.

Five of 10 leading causes of death showed sharp rate declines as compared with last year. The declines were large enough to make it improbable that they were produced by normal fluctuations due to sampling. The five were vascular lesions; accidents; influenza and pneumonia, except of newborn; general arteriosclerosis; and diabetes mellitus.

The infant mortality rate of 25.3 per 1,000 live births set a record low, about two percent under the previous low of 25.7 recorded in 1960.

Recent statements that citizens of some foreign countries are healthier than Americans was disputed emphatically by the American Medical Association. The A.M.A. statement was prompted by a paper presented at the recent annual meeting of the American Sociological Association in Washington. The paper said that the United States is not as "healthy" as Sweden and England.

"This is like trying to compare apples to oranges," F. J. L. Blasingame, M.D., The A.M.A.'s Executive Vice President, said.

"There have been accounts that comparisons of a nation's overall health can be made on the basis of life expectancy—that the people of Sweden and Britain are healthier because they live longer on the average than Americans.

"This proves nothing, for what you are actually comparing are differences in the make-up of populations. Both of these nations have small, stable, homogenous populations, whereas that of the United States is a vast mixing from practically every con-

ceivable corner of the globe, including all nationalities and races. . . .

"What you can prove statistically is that a person of Swedish descent in Minnesota lives longer than a Swede in Sweden, and that Mexicans apparently live longer in New Mexico than they do in Mexico. . . .

"The death rate from automobile accidents is much higher in the United States than in any European country because a larger percentage of the population own cars. This is a matter of economics and not medicine. Yet auto fatalities are a large factor in reducing this nation's life expectancy."

Dr. Blasingame also pointed out the economic aspect of Americans living at a faster pace, consuming more expensive, fatty foods and dying of heart attacks with much more frequency.

"Communicable diseases, on the other hand, are almost entirely a medical problem and the fact is that the death rate from communicable diseases in the United States is well below that of England or Sweden," he said.

International statistics on infant mortality rates are meaningless, Dr. Blasingame said, because of different definitions for what is a live birth or a still birth.

"As for insinuations that longer life span and lower infant mortality are somehow linked with the socialized medical practices of England and Sweden, there is absolutely no substantiation," he said. "The rate of increase in longevity in England is no different now than it was prior to the founding of the National Health Service there in 1947, and may actually have declined."

## MEDICAL NEWS IN TENNESSEE

### The Tennessee Medical Assistance for the Aged Program (As of October 1, 1962)

Medical Assistance for the Aged (MAA) is the program authorized under the Kerr-Mills Law and as administered in Tennessee by the Department of Public Welfare will provide 15 days hospitalization, 90 days nursing home care, and certain essential drugs to persons 65 years or older who are not receiving monthly Old Age Assistance checks, but are otherwise eligible.



### Eligibility

To be eligible a person must be 65 years of age or over, living in Tennessee but not living in a public institution or drawing monthly welfare checks. His annual income, if single, must not exceed \$1,000 a year and if married, \$1,500 a year but a person may own real estate provided his equity in the property does not exceed \$8,000 and the total value is not more than \$10,000. They must need hospitalization, nursing home care or drugs as certified by a physician for either an acute illness or injury or a life endangering illness, cancer and other chronic illness, if life endangering, is included if treatment would offer a cure or favorable results. The patient must pay the first \$25.00 of his hospitalization each year but no more for any fiscal year (July 1 to June 30).

### Certification for Eligibility

Certification for eligibility for MAA is obtained at the office of the *Department of Public Welfare* in the county where the applicant lives and he may apply in person, by letter or phone or ask some one to apply for him, or even request a welfare worker to visit him at his home or hospital. There is no enrollment fee or other charge for this service. Certification, if possible, should be made before the need arises but can be obtained at the time the illness develops.

### Drugs

Certain essential drugs are obtainable by simply taking the physician's prescription to a registered pharmacist who has signed a contract with the Department of Public Welfare agreeing to furnish the drugs at a certain price. Instead of paying for the drugs, he shows the pharmacist his eligibility card and signs a receipt for the drugs.

A list of the drugs available has been mailed to TSMA members.

### What Are the Physician's Responsibilities in Helping a Patient Secure Hospitalization?

The physician:

1. *Calls the county officer of the Department of Public Welfare*, notifies the di-

rector of the patient's name, his diagnosis, estimated number of days of hospitalization, and hospital to which he is referring the patient.

2. *Receives an application form from the welfare office and inserts on the form the patient's name, diagnosis, estimated length of hospitalization, and hospital to which referred.*
3. *Sends the application to the county medical review officer.*

### What Are the Physician's Responsibilities in Helping a Patient Obtain Admission to a Nursing Home?

The physician:

1. Determines the need for nursing home care based on the above criteria.
2. Makes plans with the patient and/or the patient's family for admission to a licensed nursing home.
3. Notifies the county director of the Department of Public Welfare of his recommendation for nursing home care.
4. Provides the county director of Public Welfare with medical report, *Form M-52*. (This form is supplied the physician by the county director.)

### Kerr-Mills Program Expanded in State

An estimated 2,700 persons may receive nursing home payments assistance during the first year of Tennessee's expanded medical care program.

Governor Buford Ellington stated that elderly citizens eligible under the Kerr-Mills program will be able to receive \$80 per month for three months beginning October 1, to pay for convalescent hospitalization. This is a distinct broadening of the Kerr-Mills program in Tennessee as it adds nursing home care to the program already including up to fifteen days of hospitalization and a broad drug formulary available to eligible persons.

A mailing to every member of the State Medical Association has been made, pointing out the conditions and coverage included in the expanded Kerr-Mills program, and instructions for every doctor on how to inform his patients to be certified for aid under the Kerr-Mills program, and what steps and agencies to contact for this purpose. This is an informative guide that

every physician should hold readily available for use with his patients and in giving complete information on how to go about applying under the Kerr-Mills program in the state.

Physicians should take every step to make the Kerr-Mills program effective since this is medicine's answer to the proposed government plan under the social security system for health care.

### Central State Hospital

In early October, there will begin in a selected section of the Cooper Building a Demonstration Project in Psychiatric Nursing. This project will be led by Jackie Holmes, R.N., Maxine Arnold, R.N. and Dora Fannin, R.N.

This project will attempt to demonstrate the advantages that accrue to patients when ward programs are structured dynamically and meaningfully, when aides are given the opportunity to participate constructively and when unified team effort is brought to bear upon the problems of the patients residing there. This program has the interest and support of the Vanderbilt School of Nursing and the U. S. Public Health Service; it is hoped that this demonstration project may lead to the establishment here at Central State Hospital of a training facility for interns in psychiatric nursing in conjunction with training facilities leading to a master's degree in psychiatric nursing at Vanderbilt.

### TB Units Ask Fund Increase

Tennessee's four tuberculosis hospitals state a need for a budget increase of almost \$1 million in the next two years if they are to operate at full capacity. That is the report made recently by administrators and directors of the hospitals to Board of Trustees of TB Hospitals.

Dr. R. H. Hutcheson, state commissioner of health and secretary of the board, said that more than \$3½ million was appropriated for the Memphis, Nashville, Chattanooga and Knoxville hospitals for the current biennium. He said that Chattanooga and Knoxville hospitals have been operated at full capacity, but those at Memphis and Nashville at only 80% capacity because of the lack of personnel. The total amount

needed for the next biennium will be about \$4½ million, the administrators advised.

### University of Tennessee College of Medicine

A University of Tennessee psychologist has been awarded a \$73,184 grant to continue for four years, a study of the effects of prenatal radiation on the mental activity of the unborn.

★

Eight physicians have been made staff members of the University of Tennessee College of Medicine. They are: Dr. Teresa Silverman, instructor in psychiatry; Dr. M. Ozturk, instructor in psychiatry; Dr. Kenneth J. Munden, assistant professor in psychiatry; Dr. Ewin S. Chappell, associate professor in psychiatry; Dr. E. William Rosenberg, assistant professor in dermatology; Dr. Ralph R. Reed, instructor in medicine; Dr. Richard E. Travis, instructor in medicine and Dr. Thomas Maguda, instructor in otolaryngology.

★

The child development program of the University has grown to such an extent that additional space and facilities have been made available. The study, now in its third year, is being made at 14 of the nation's leading medical centers in cooperation with the National Institute of Neurological Diseases and Blindness.

The program calls for the study of 50,000 pregnant women over the nation through pregnancy, labor and delivery and their children for a number of years thereafter, in an effort to discover the causes of brain damage which may lead to cerebral palsy or similar neurologic disorders, epilepsy, mental retardation, or abnormal behavior based on brain damage, or a combination of these conditions or malformations.

★

A \$58,456 research grant has been made by the U. S. Public Health Service for a three-year study on the clinical and experimental evaluation of reticuloendothelial function. The grant has been made to Dr. N. R. Di Luzio, professor of physiology and Dr. Nathan K. Salky, instructor of medicine.

★

The Section of Epidemiology of the De-



partment of Preventive Medicine has been awarded \$234,065 by the National Institute of Allergy and Infectious Diseases, National Institutes of Health, U. S. Public Health Service. The grant is for an additional five years of research studies on intestinal and respiratory virus diseases.

★

A member of the staff has pioneered in the development of a new instrument to electronically induce anesthesia. Dr. Wm. H. L. Dornette, chairman of the Division of Anesthesiology at the College has been investigating for about six months the possibilities of using electric current to anesthetize patients.

★

The U. S. Army Chemical Corps Medical Research Directorate has awarded Dr. Roger T. Sherman, Department of Surgery, \$30,000 for a study of blister burns. The Army Surgeon-General has renewed for the third year a \$28,845 allocation for continued study of the response of the body to various plastic materials which are used to substitute for diseased tissues.

★

A new West Tennessee Cancer Clinic is planned for the Memphis Medical Center. The plans call for a three-story building, costing \$280,000 and having 15,000 square feet. The College of Medicine uses the clinic not only for research but also uses the patients for compiling statistical information about cancer. The new clinic is to be completed by next summer.

★

Three microbiologists have been appointed to the staff of St. Jude Research Hospital with concurrent appointments on the staff of the University in the Department of Microbiology. They are Dr. Allan Granoff, associate professor, and Drs. Raymond N. Hiramoto and Irving J. Slotnick, assistant professors.

### American College of Physicians

The Tennessee-Kentucky Regional Meeting was held in Nashville on September 15, under the guidance of Dr. Harrison J. Shull, Governor for Tennessee, and Dr. Sam A. Overstreet, Governor for Kentucky. An excellent program was arranged for the Tennessee portion by Dr. Albert Weinstein, Nashville; Dr. Fay B. Murphey, Jr., Chatta-

nooga; Dr. E. Charles Sienknecht, Jr., Knoxville; Dr. Lamb B. Myhr, Jackson; Dr. Gerald I. Plitman, Memphis, and Dr. I. Frank Tullis, Memphis. The Committee on Arrangements consisted of Doctors Fred Goldner, Jr., J. Lanier Wyatt, Frederic E. Cowden, and James J. Callaway of Nashville. Among the guests were Dr. J. Murray Kinsman, former Vice-President and Regent of the College, of Louisville; Mr. Paul Cotton of the College Office, Philadelphia, and Dr. Franklin M. Hanger, Staunton, Virginia, President of the American College of Physicians and guest speaker at the dinner. The meeting was attended by 37 members and guests from Kentucky, and 93 members and guests from Tennessee.

### The American College of Surgeons

The Tennessee Chapter of the College held its semi-annual meeting at Vanderbilt University School of Medicine, Nashville, September 29, with Dr. Van Fletcher, Chattanooga, presiding. An interesting and stimulating program was presented heard by the 86 members and guests who attended from all sections of the State. Dr. James H. Spencer, of Chicago, Assistant Director of The American College of Surgeons brought greetings from the College and took part in a discussion of certain problems which face the American College of Surgeons.

### Vanderbilt University School of Medicine

The dedication of a new wing to Vanderbilt University Hospital took place on September 28, the invited speaker for the occasion being Miss Mary Switzer, Director of Vocational Rehabilitation of Health Education and Welfare. Certain portions of the new wing supported by the National Foundation March of Dimes are devoted to rehabilitation and particularly of handicapped and disabled children.

The dedication offered the occasion for a two-day Symposium on Birth Defects, sponsored by The National Foundation, and held on September 27-28. Dr. Randolph Batson, Acting Dean, as General Chairman, organized the overall program. Dr. Virginia Apgar, Director, Division of Congenital Malformations, The National Foundation, was Chairman of the Scientific Program Committee. The first day emphasized particularly the genetic aspects in birth de-

fects, the speakers being among the Nation's outstanding geneticists and scientists from medical schools and research institutes in this Country. The program for the second day dealt with the practical problems of diagnosis and management of birth defects. Total registration of visiting physicians and scientists was about 300.

## PERSONAL NEWS

**Dr. Jerry Bagwell**, formerly of Kentucky, has joined the staff of the Union City Clinic and is associated with **Dr. William N. Carpenter** in the field of obstetrics and gynecology.

**Dr. D. K. Gotwald** and **Dr. T. C. Delvaux, Jr.** announce the association of **Dr. L. S. Graham** in the practice of pathology at St Thomas Hospital in Nashville.

**Dr. E. F. Harrison**, formerly of Chattanooga, has been named director of the Division of Tuberculosis Control in the State Health Department in Nashville. He succeeds the late Dr. R. S. Gass.

**Dr. Giles Coors**, Memphis, recently addressed the Rotary Club in Wynne, Arkansas. His subject dealt with the cost of medicare.

**Dr. Homer Marsh**, Memphis, was a recent speaker before the Memphis Rotary Club.

**Dr. Howard Farrar**, Manchester, has been named a co-director of the Coffee County United Givers Fund Campaign.

**Dr. Robert J. Smith** has become associated with The Jackson Clinic in the orthopedics department and **Dr. Robert B. Mandle** in the department of internal medicine.

**Dr. Dale A. Teague**, Knoxville, now conducts a weekly clinic at the Uplands Cumberland Medical Center in Crossville.

The Medicare issue was discussed by **Dr. W. G. Rhea**, Paris, at a luncheon of the Association of Life Underwriters.

**Dr. Gilbert Levy**, Memphis, has been named to direct the 1962 Shelby United Neighbors Campaign among workers of the medical profession.

**Dr. John B. Nuckolls**, Jackson, recently addressed the Kiwanis Club.

**Dr. Spencer Thornton**, Nashville, was guest speaker at the August program meeting of the Pilot Club of Nashville.

**Dr. Charles E. Waldroup** announces the opening of his office for the practice of medicine in Gatlinburg. He is associated with **Dr. Ralph H. Shilling**.

**Dr. L. W. Nabers**, Morristown, governor of Rotary District 678, recently addressed the McMinnville Rotary Club.

**Dr. William Dornette**, Memphis, addressed the Kiwanis Club and discussed the latest developments in surgical anesthetics.

**Dr. Robert R. Rudd**, Collierville, has been appointed to the medical staff of the Veterans Administration Hospital.

**Dr. Jack Adams**, Chattanooga, was a guest speaker before the Chattanooga Engineers Club, in August.

**Dr. Crawford Adams**, Nashville, recently addressed the Nashville Zonta Club.

**Dr. Michael J. Sweeney**, Memphis, associate professor of pediatrics at the University of Tennessee College of Medicine spoke on "Fluids and Electrolytes" at a meeting of the American Academy of Pediatrics in Chicago.

**Dr. Nobel E. Guthrie**, Memphis, and **Dr. R. H. Kampmeier**, Nashville, appeared on the program of the World Forum on Syphilis and Other Treponematoses, held in Washington, September 4-8.

**Dr. Harrison J. Shull**, Nashville, has been appointed to the Subspecialty Board in Gastroenterology of the American Board of Internal Medicine.

**Dr. William M. Clark**, Nashville, announced the opening of his office for the practice of neurology in the Medical Arts Building.

**Dr. Roger B. Burrus**, Nashville, has opened his office for the practice of obstetrics and gynecology.

**Dr. Harrison H. Shoulders, Jr.**, Nashville, has opened an office for the practice of general surgery.

**Dr. Lawrence G. Schull** has joined **Doctors E. Palmer Jones** and **Leslie E. Traughber, Jr.** of Nashville, in the practice of anesthesiology.

**Dr. C. Gordon R. Sell**, Nashville, announces the removal of his office to 2111 Hayes Street for the practice of cardiology.

**Dr. Patrick R. Levesque**, Nashville, has opened his office for the practice of internal medicine.

## BOOK REVIEW

**Lower Digestive Tract. Part II of Volume 3. Digestive System. Ciba Collection of Medical Illustrations. Prepared by Frank H. Netter, M.D. Edited by Ernst Oppenheimer, M.D. 230 pages. New York: Ciba Pharmaceutical Co., 1962. Price \$15.00.**

Ciba is to be complimented for another of its great contributions to medical art. Periodically, this pharmaceutical corporation has published, surely at great cost, collections of medical illustrations by the well known medical illustrator, Dr. Frank H. Netter. Volumes 1 and 2 related to the digestive system have been published in recent years. The present volume, Part II of Volume 3, deals with the organs of the lower gastrointestinal tract done, of course as in the previous editions, in color and amplified by radiographs of lesions.

No doubt all physicians have seen many of these illustrations in some of the Ciba brochures of past years, but their collection into one volume, as with other volumes in the past, represents a great contribution to medicine. One should not overlook commenting upon the extensive and excellent bibliography references which is included in the volume.



## ANNOUNCEMENTS

### Calendar of Meetings—1962

#### State

- October 25-26—Tennessee Academy of General Practice—Nashville  
 November 15—Middle Tennessee Medical Association—Lawrenceburg  
 December 6-7—Middle Tennessee Heart Association—Nashville

#### Regional

- October 15-19—Eleventh Annual Conference, U. S. Civil Defense Council—Knoxville  
 October 23-25—Postgraduate Course: "Clinical Pathology in Medical Practice"—Augusta, Georgia  
 October 29-31—American Association for the Surgery of Trauma—Hot Springs, Virginia  
 November 9-10—Southern Society for Pediatric Research—Gainesville, Florida  
 November 12-15—Southern Medical Association—Miami Beach, Florida  
 November 13-15—Postgraduate Course: "Orthopedics in General Practice"—Augusta, Ga.  
 November 14—Medical Society of the District of Columbia—Washington, D. C.  
 November 15-17—Southeastern States Cancer Seminar—West Palm Beach, Florida  
 December 4-6—Southern Surgical Association—Boca Raton, Florida  
 December 4-6—Postgraduate Course: "Growth and Development—Management of Common Behavior Disturbance"—Augusta, Georgia

#### National

- October 21-24—Interstate Postgraduate Medical Association—Chicago, Illinois  
 October 21-26—American Society of Anesthesiologists, Inc.—New York City  
 October 22-23—American Cancer Society, New York City  
 October 22-26—American College of Chest Physicians Postgraduate Course: "Clinical Cardiopulmonary Physiology"—Chicago, Illinois  
 October 26-30—American Heart Association, Inc.—Cleveland, Ohio  
 October 27-November 1—American Academy of Pediatrics—Chicago, Illinois  
 October 28-31—American College of Gastroenterology—Chicago, Illinois  
 November 4-9—American Academy of Ophthalmology and Otolaryngology, Las Vegas, Nevada  
 November 12-14—Association of Military Surgeons, Washington, D. C.  
 November 12-16—"Recent Advances in the Diagnosis and Treatment of Diseases of the Heart and Lungs"—New York City  
 November 25-28—American Medical Association Clinical Meeting—Los Angeles, Calif.  
 December 1-6—American Academy of Dermatology, Inc.—Chicago, Illinois

### AMA Film Catalogue Now Available

The 1962 edition of the AMA Medical Health Film Library Catalogue is now available for distribution by the Medical Motion Pictures and Television Section of the Department of Scientific Assembly. The expanded catalogue contains information about 173 films for professional audiences and 82 films to be used by physicians in addressing lay groups.

Films may be obtained, without charge, by addressing requests to the American Medical Association, Medical Motion Pictures and Television Section, Department of Scientific Assembly, 535 North Dearborn Street, Chicago 10, Ill.

### The University of Tennessee College of Medicine Announces Postgraduate Study in Rheumatology October 31-November 2, 1962

This course, under the direction of Glenn M. Clark, M.D., associate professor in Internal Medicine at The University of Tennessee College of Medicine, will be presented by the staffs of the Department of Rheumatology of The University of Tennessee College of Medicine, Campbell Clinic and Hospital, Les Passes Rehabilitation Center and distinguished guest speakers who have been selected for their acknowledged leadership in their respective fields and for their teaching ability.

The program is designed to assist the practicing physician in improving his skills in the handling of a broad spectrum of connective tissue disorders. Although the handling of the common problems often seen in office practice will be emphasized, newer knowledge concerning the basic nature of the rheumatic disease will also be presented and discussed.

The program will also include (1) diagnosis and treatment of rheumatoid arthritis and lupus erythematosus (2) laboratory procedures of value in rheumatology (3) application of the skills of physical medicine to the treatment of rheumatic disease (4) demonstration clinic at the Les Passes Rehabilitation Center (5) problems of osteoarthritis and (6) orthopedic management of arthritic hands and feet.

In order to provide an informal atmosphere and give individual instruction, the enrollment for the course will be limited to twenty-five (25) physicians.

For those interested, this course is acknowledged for Category I Credit toward educational requirements of the American Academy of General Practice.

### Dwight E. Clark Memorial Lecture

As a community service, the Roane-Anderson County Medical Society invites the general public to attend the third annual Dr. Dwight E. Clark Memorial Lecture to be given Monday, October 29, 1962 at 8:00 P.M. in the Jefferson Junior High School Auditorium, Oak Ridge, Tennessee.

The subject of the lecture will be "Mind, Emotions, and the Digestive Tract," and will be given by Dr. Walter L. Palmer, Emeritus Professor of Medicine at the University of Chicago. Dr. Palmer has spent many years investigating the problems of the digestive system.

### Chest Physicians Southern Chapter Meeting

The Southern Chapter of the American College of Chest Physicians will hold its annual meeting on November 11 and 12, 1962, at the Hotel Fontainebleau, Miami Beach, Florida. The meeting will be held in conjunction with the annual meeting of the Southern Medical Association. The Southern Chapter covers 16 southern states and the District of Columbia. All physicians are invited to attend the meeting. There is no registration fee.

### Physicians Recently Licensed in Tennessee

Henry A. Boldt, Jr., Ann Arbor, Michigan  
 Moffett R. Walker, Jr., Lookout Mountain  
 Robert C. Bone, Lebanon  
 John Ercel Fryer, Cincinnati, Ohio  
 Jerry K. Humphreys, Nashville  
 Robert B. Meyerowitz, Hermitage  
 Marvin E. Schmidt, Barnhart, Mo.  
 Jack B. Caskey, Jr., Memphis  
 John M. Ivie, Memphis  
 Daniel H. Stamper, Jr., Huntington, W. Va.  
 Luis Geerkan, Chattanooga  
 Franklin Dale, Denver, Colo.  
 John B. Otis, Nashville  
 M. Haskell Newman, Jr., Ann Arbor, Mich.  
 Clayton A. Travland, Galveston, Texas  
 Putnam C. Kennedy, Glendale, Calif.  
 Billie H. Putnam, Jackson, Miss.  
 Donald O'Sullivan, Paducah, Kentucky  
 James F. Herd, Ft. Worth, Texas  
 Charles B. Pittinger, Iowa City, Iowa  
 James E. Cunningham, Memphis  
 Oscar G. Simpson, Nashville  
 Harry L. Bailey, Nashville  
 Warren W. Davis, Jamaica Plain, Mass.  
 Walter D. Harris, Lexington, Ky.  
 Fredrick Lasker, Jamaica, N. Y.  
 Tom K. Sawyer, Nashville  
 Linton B. West, Jr., Atlanta, Ga.  
 Katherine G. Crawford, Memphis  
 John H. Moore, Phoenix, Arizona  
 Jack W. Wilson, Memphis  
 Oscar B. Carlisle, Jackson, Miss.  
 Amos Carvel Gipson, Jr., Gadsden, Ala.  
 James William Cheek, Ada, Okla.  
 Joseph Edward Roe, Knoxville  
 Harry W. Wilson, Memphis  
 Wm. H. Fancher, Jackson, Miss.  
 Horace L. Elmore, Memphis  
 Jack M. Mobley, Knoxville  
 Don Raoul Salmon, Chattanooga  
 Walter A. Benney, Jr., Nashville  
 John S. Fleming, Memphis

### Southern Medical Association

The fifty-sixth Annual Meeting of the Association will be held at Miami Beach, November 12 to 15. The officers of the twenty scientific Sections have arranged an outstanding program. Attendance at the meeting in pleasant surroundings will offer a good fare in scientific medicine pointed to its practical application, as well as good fellowship for doctors from the Southland. For further information write Mr. Robert Butts, Southern Medical Association, 2601 Highland Avenue, Birmingham, Alabama.

### Middle Tennessee Heart Association

The Association has recently printed a booklet entitled "Directory of Cardiac Services Available to Heart Patients in Middle Tennessee, 1962." If you have problems with your cardiac patients, this booklet will help you in determining where you may turn for assistance. This and a couple of dozen publications of The American Heart Association of assistance in education of your patient, are available for the asking if you write the Middle Tennessee Heart Association, 209 23rd Ave., N., Nashville.

### Middle Tennessee Medical Association

Thursday, November 15, 1962

Lawrenceburg, Tennessee

9:00 A.M.

Registration and Coffee

10:15 A.M.

"Unusual Lesion of the Vermiform Appendix"—

J. L. Farringer, Jr., M.D., Nashville

"Emphysematous Cholecystitis, Case Report"—

James T. Jackson, M.D., Dickson

"Some Newer Aspects of Laboratory Medicine"—

James Phythyon, M.D. and Frank Womack, M.D., Nashville

Discussion from the floor.

"Low Back Pain" (Roundtable Discussion)—C.

David Scheibert, M.D., Moderator; Cully Cobb, Jr., M.D., Robert M. Foote, M.D., Charles M. Hamilton, M.D., Ralph W. Massie, M.D., Nashville; and Lt. Col. Ernest Lineberger, MC, USA, Fort Campbell, Kentucky.

12:45 P.M.

Luncheon (Dutch Treat)

1:45 P.M.

Business Meeting

2:30 P.M.

Presidential Address—Richard E. Green, M.D., Murfreesboro

"Malpractice as It Relates to Diagnosis"—Mr. Elmer D. Davies, Jr., Attorney at Law, Nashville

"Fractures in Children"—Capt. Robert C. Codrington, MC, USA, Fort Campbell, Kentucky

Discussion—J. William Hillman, M.D., Nashville

"The Role of the Private Practitioner in Community Health Problems"—General M. M. Green (Retired, USA), Clarksville

"The Use and Abuse of the Cervical Cone"—J.

Howard Young, Jr., M.D., Murfreesboro

Discussion—James W. Ellis, M.D., Nashville



"Masculinizing Tumors of the Ovary"—C. Gordon  
Peerman, M.D., Nashville

Discussion—William H. Wall, Jr., M.D., Clarks-  
ville

"The Management of Pulmonary Emphysema"—  
James J. Callaway, M.D., Nashville

Discussion—Lloyd H. Ramsey, M.D., Nashville

"Early Management of Eye Injuries"—Joseph C.

Bailey, M.D., Murfreesboro

Discussion—Wallace Faulk, M.D., Nashville

Movie: "Intracardiac Lesions"—Crawford Adams,  
M.D. and Harold Collins, M.D., Nashville

5:45 P.M.

Social Hour

Presidential Dinner

# Journal of the Tennessee State Medical Association

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No. 11

## Surgical Considerations Of Vascular Disease In Diabetics\*

WILLIAM H. EDWARDS, M.D.,† Nashville, Tenn.

*Vascular surgery is becoming accepted almost as an everyday procedure and has opened up a vast field of technical advances and skills in the extension of life. An aging population, especially, has created this demand that something be done for the complications of atherosclerosis. The various approaches in vascular surgery have been reviewed by the author.*

Atherosclerosis affecting major arteries occurs in nondiabetics and diabetics alike. The disease process is often accelerated in the person with diabetes who, in addition to his major vascular involvement, may have occluding lesions of the small terminal arterioles of the lower extremities. The accomplishments in the field of vascular surgery in the past several years have placed the patient with occlusive arteriosclerotic disease in an entirely new perspective. It is now within the realm of diagnosis to ascertain the cause and site of obstructing lesions and, carried further, to surgically correct the obstructed segments of arteries and to restore circulation to a state of normalcy. The surgical principles involved in the various aspects of atherosclerotic occlusive disease have been placed on a sound basis by Leriche, DeBakey, dos Santos, Cannon, Sterling Edwards, and many other dedicated workers. The appli-

cation of basic considerations has yielded gratifying results in the treatment of aneurysmal and arteriosclerotic occlusive disease. The discussion of some of these pertinent points is the purpose of this communication. Occlusive disease and aneurysmal disease are the two large categories to be covered, with the site of segmental occlusion or dilatation determining the clinical symptoms produced.

### Cerebral Ischemia

The clinical entity of extracranial atherosclerotic disease producing cerebral ischemia and anoxia is now well established. Broadbent, in 1875, described lesions in the great vessels arising from the aortic arch. Occlusion of the internal carotid artery was described in 1881 by Penzoldt, while Hutchinson and Yates<sup>1</sup> emphasized the importance of extracranial occlusion of the vertebral artery in patients suffering basilar artery insufficiency. The development of arteriographic techniques and their application in patients with cerebral ischemia have demonstrated lesions extracranially with increasing frequency. It is now well recognized that the obstructing lesion may be well localized and segmental in nature, with a patent lumen proximal and distal to the lesion (Fig. 1).

The clinical features of the disease depend on the location and extent of the occlusive process. Early in the disease process the occlusion is partial, with little alteration in hemodynamics (Fig. 2a,b). Advancement leads to proliferation of the subintimal deposition of lipid material, compromise of the lumen, ulceration of the intima, and secondary thrombosis. Partially occluding lesions produce transient ischemic attacks characterized by homolateral visual

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FIG. 1. Almost complete obstruction of the left internal carotid artery with normal proximal and distal vessels.

symptoms and contralateral motor and sensory disturbances. Diagnosis of cerebral ischemia requires a high index of suspicion and certain basic physical findings. The history of recurring episodes of weakness of an extremity, visual disturbances or aphasia, coupled with the presence of a murmur under the angle of the mandible over the bifurcation of the carotid artery, should

lead to arteriographic investigation. The radiographic findings in figure 3a,b point up these facts. Investigation in this diabetic revealed an asymptomatic occlusion of the right internal carotid with almost complete occlusion of the left internal carotid and resultant cerebral ischemia.

Restoration of a normal pulsatile flow is the goal of surgical treatment. In the carotid artery this is most easily accomplished by the principle of endarterectomy rather than resection or by-pass graft. Surgical intervention is recommended in any lesion which by arteriography is thought to produce a 50% reduction in the size of the lumen. The treatment of radiographically significant lesions which are asymptomatic is still open to discussion, but prevention of a catastrophic stroke seems a rational cause for correction of a blockage of significant degree.

Figure 4a,b demonstrates the arteriographic findings in a lesion producing about 75% occlusion, and the results after endarterectomy and application of a patch graft.

#### Renal Hypertension

Following the experimental work of Goldblatt and associates,<sup>2</sup> the cause and effect relationship between hypertension and renal disease was shown to be related to constriction of the renal artery, producing

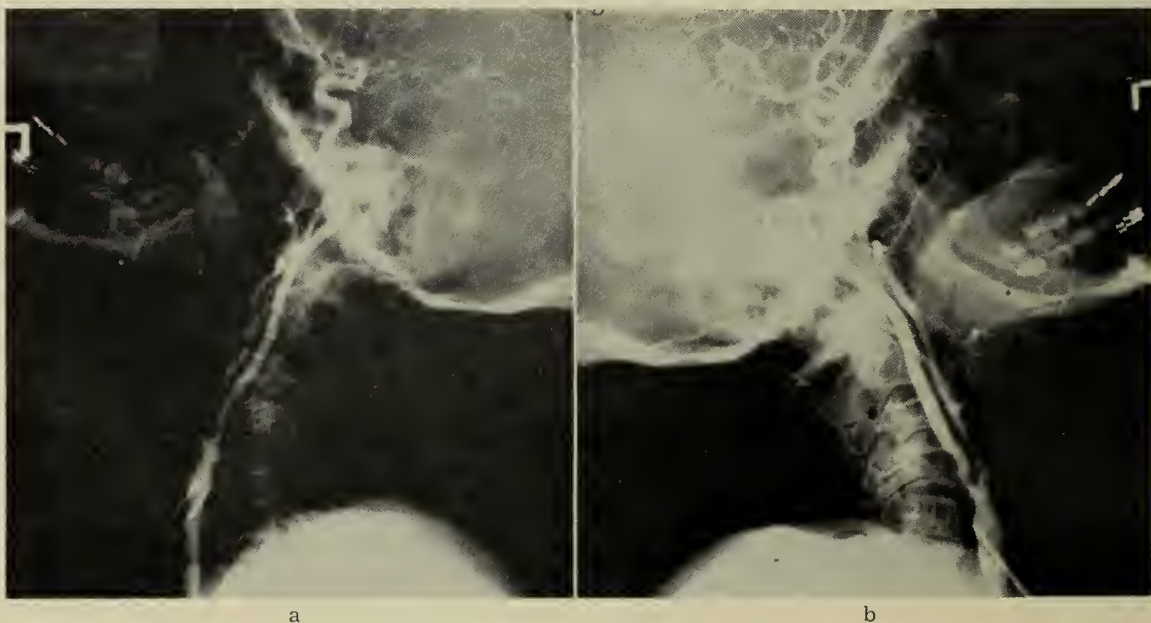


FIG. 2. Bilateral arteriograms demonstrating a partially occluding lesion of the left internal carotid (a) which is producing little alteration of hemodynamics. The lesion of the right internal is almost complete (b).



FIG. 3. Asymptomatic occlusion of the right internal carotid (a), and progressive, symptomatic partial obstruction of the left internal carotid just distal to the bifurcation (b).

elevation of blood pressure. A revival of interest in the surgical treatment for hypertension has followed the general advancements made in vascular surgery. The present approach attempts to cure hypertension by restoration of circulation to the involved kidney and preservation of renal function.

The criteria for selection of patients for

investigation as to the cause of hypertension are not universally accepted. The selection of patients under 35 or over 55 years has not proven adequate. The use of intravenous pyelograms, renal clearance studies and renograms to screen hypertensive patients all have inherent deficiencies. Therefore adequate visualization of the renal arteries is essential to incriminate the renal



FIG. 4. Smooth, well-localized constriction (a), and its appearance after endarterectomy and application of a Dacron patch graft. (b).



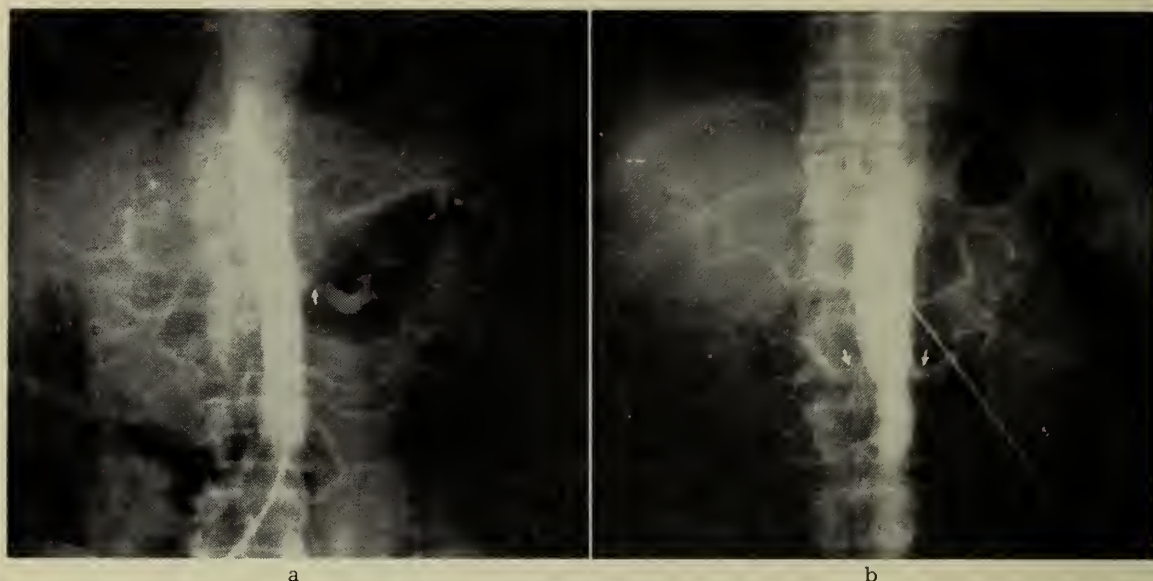


FIG. 5. Insertion of a catheter via a percutaneous femoral puncture, and under fluoroscopic localization the contrast media is injected with pressure injector (a); translumbar insertion of a long #17 gauge needle and the manual injection of media likewise yields excellent visualization of the renal arterial system (b).

vascular system in the hypertensive patient.

The physiologic mechanism for hypertension of renovascular origin would appear to be the release of a proteolytic enzyme, rennin, from the kidney subjected to diminished arterial pulse pressure. This enzyme acts on a protein substrate in the liver forming a decapeptid, which in turn is converted into an octapeptid, the active vasopressor substance.

Translumbar or retrograde aortography yields the most satisfactory demonstration of renal lesions (Fig. 5a,b). Only by a broader application of this technic will hypertensive patients with stenosis of the renal artery as the incriminating factor be given an opportunity for treatment through accurate diagnosis. The use of 75% Hypaque injected either via the translumbar route through a No. 17 gauge needle or retrograde by a femoral catheter have yielded the highest quality of x-ray visualization and lead to accurate diagnosis.

The surgical objective in renal vascular hypertension is restoration of normal pulsatile blood flow. Endarterectomy, replacement by graft, and by-pass graft principle are each applicable in certain selected cases.

Figure 6 is an aortogram in a 53 year old white man, who presented himself because of claudication in the left leg. The history was interesting in that the man had been a known hypertensive for three years, and



FIG. 6. Complete left common iliac occlusion with a well localized constricting lesion of the right renal artery.

had a severe episode of pulmonary edema two months previously. The arrow indicates the location of the lesion in the right renal artery. Surgical correction, as depicted in figure 7a, led to reappearance pedal pulses and a reduction of blood pressure to the 130 to 140 systolic (Fig. 7b).

In figure 8 pre- and postoperative blood pressure levels show the results in a 51 year old man treated by the by-pass principle to restore circulation in a situation in which renal artery stenosis was present. The results in moderate sized series of patients

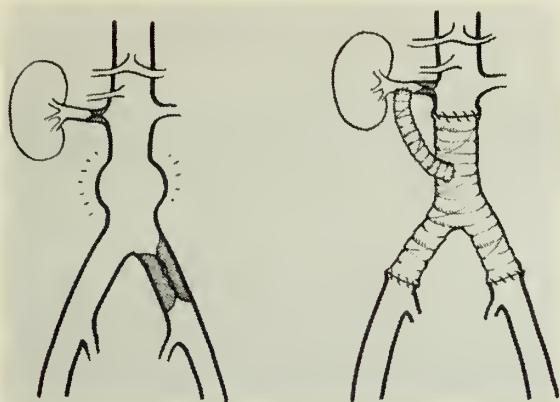


FIG. 7a. In addition to the renal by-pass, a small aneurysm of the terminal aorta was resected, and the occlusive disease in the left iliac artery corrected.

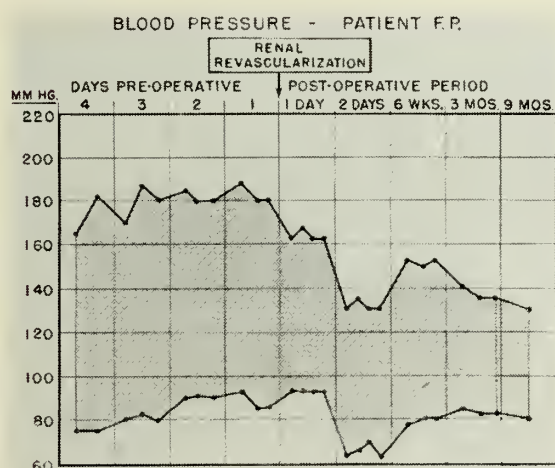


FIG. 7b. Blood pressure has been maintained at normotensive levels for nine months with no further episodes of pulmonary edema.

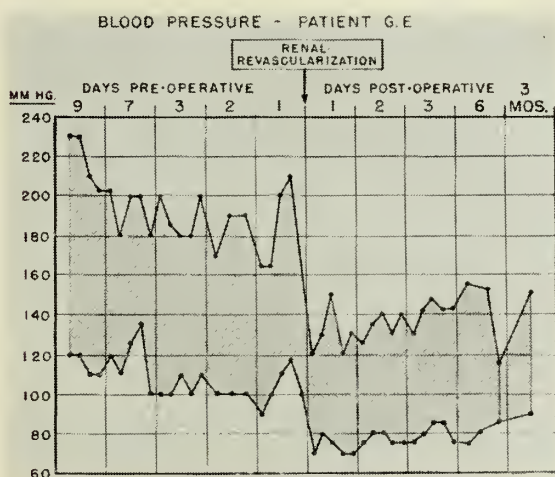


FIG. 8. Known hypertension of about one year's duration. Lesion of the left renal artery was demonstrated (Fig. 5a) and renal revascularization accomplished with by-pass principle. Blood pressure seems to have stabilized at 150/90.

have yielded reduction of hypertension in 70 to 80% of patients. Restoration and maintenance of a normal pulsatile flow should yield excellent results.

### Intestinal Angina

Postprandial epigastric pain, bloating, and radiation of pain to the back are symptoms for which medical advice is frequently sought. An awareness of the possibility of ischemia of the intestine, aggravated by the increased work load of a meal, should lead to consideration of the diagnosis of abdominal angina. Many years ago Dunphy<sup>3</sup> made the astute observation that 7 of 12 patients dying from mesenteric thrombosis associated with atherosclerosis had a history of recurrent abdominal pain preceding the fatal attack by weeks, months, or years.

No specific diagnostic procedures are presently available except aortography, and so a high index of suspicion from the history and physical findings must lead to further investigative studies.

### Intermittent Claudication

The diagnosis of aorto-iliac and superficial femoral atherosclerotic disease can usually be made on the clinical manifestations of claudication and fatigue of the thighs and calves, ischemic cutaneous changes in the feet, or diminished or absent pulses in the lower extremities. The symptoms may extend over a long period of time and are slowly progressive in character, with severity depending on the degree of occlusion which is present.

Secondary distal occlusions occur in patients with aorto-iliac occlusive disease. Complete occlusion of the aorta, as described by Leriche,<sup>4</sup> or common iliac occlusion seems to protect the superficial femoral and popliteal artery from the ravages of arteriosclerosis. The progression of the disease process with occlusion of the popliteal, anterior and posterior tibials leads to the ischemic, painful foot, which is so frequently the end result of the accelerated disease in diabetics.

In order to precisely plan the approach best suited to a particular patient, aortography and femoral arteriography are frequently essential. In the patient who presents himself with an absent femoral pulse, it is essential to ascertain the patency of the





FIG. 9. Femoral arteriogram in a patient with signs and symptoms of proximal blockage. Excellent superficial femoral and popliteal run-off is demonstrated by this arteriogram.

distal arterial system (Fig 9). Clinical evaluation of a diminished pulse is frequently unreliable, setting the trap for failure of a graft. An attempt at restoration of circulation in an occluded superficial femoral artery which has inadequate inflow from above is doomed to failure. Attempts at relief of a proximal block without first determining the adequacy of the outflow leads to disappointing results.

It is in the treatment of aorto-iliac and femoral occlusive disease that all the vascular procedures at the surgeon's disposal are usable. Well-localized segments of occlusion lend themselves to endarterectomy

and application of a patch graft so there is no constriction of the lumen (Fig. 10). More



FIG. 10. Well-localized aorto-iliac disease may be treated by endarterectomy with patch grafts to prevent constriction of the lumen of the artery. Care must be taken to prevent dissection of the distal intima and occlusion of the artery at this point.

extensive degrees of atherosclerosis may be better handled by the by-pass graft or resection if necessary (Fig. 11). The use of a by-pass graft preserves the normal channels which are present; whereas, the occurrence of aneurysmal disease in conjunction with occlusive disease necessitates resection and graft replacement.

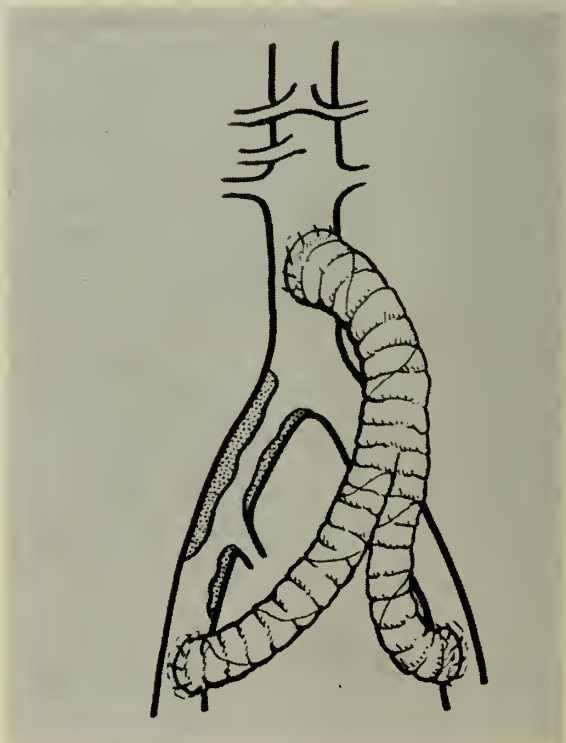


FIG. 11. On lay principle to by-pass a partially occluding lesion of the iliac artery.

Operative results for claudication of the lower extremities are excellent when large vessels such as the aorta and iliacs are the main site of obstruction. Less favorable outcomes have been the general rule in extensive disease involving the superficial femoral and popliteal arteries. Extensive, far-advanced disease as shown in figure 12,

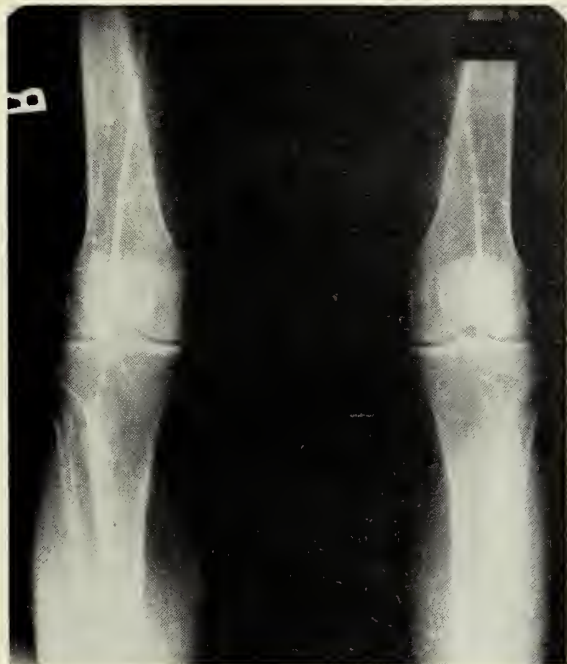


FIG. 12. The superficial femoral artery and distal popliteal of the left leg are completely blocked with insufficient run-off. This patient suffers severe rest pain.

defeats the surgeon in his attempts to restore circulation. In less extensive degrees of obstruction (Fig. 13), attempts at correction should, to a degree, depend on the patient's clinical symptoms, occupation, and general physical condition.

#### Aneurysmal Disease

Aneurysms may be classified etiologically into congenital and acquired types, or morphologically into sacciform, fusiform and dissecting types. Sacciform aneurysms involve only a part of the aortic circumference and the sac is attached to the uninvolvement vessel by a narrow neck. Fusiform aneurysms involve the entire circumference of the vessel wall. Dissecting aneurysms arise from the intramural wall, and are characterized by a hemorrhagic separation of the aortic wall which communicates with the lumen by an intimal tear.

For our discussion, the etiologic factor in

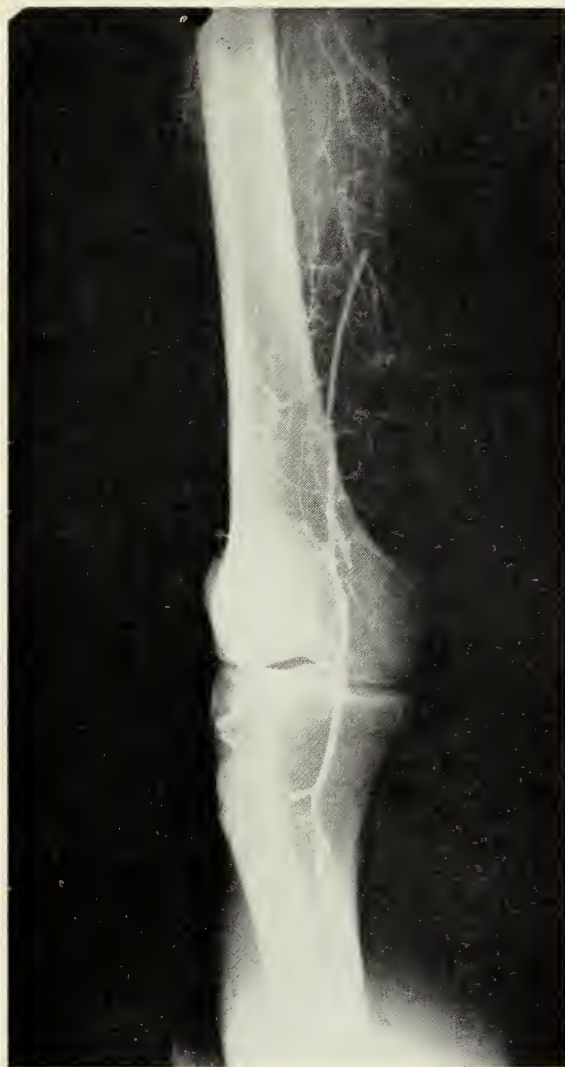


FIG. 13. Well-localized, segmental obstruction in the distal superficial femoral artery.

aneurysmal disease is atherosclerosis, which produces a medial disruptive process with progressive dilatation. Nature's defences against this process consists of the formation of fibrous tissue around the aneurysm and laminae of thrombi on the inner surface of the sac wall. These attempts are, at best, inadequate, and progressive stretching and thinning of the wall occurs. The end result of progressive enlargement is eventual rupture, with the mortality approaching 100 per cent.

The clinical manifestations of aneurysms vary depending on location and extent of the lesion. Peripheral ischemia is common with femoral and popliteal aneurysms, but obstruction of flow rarely occurs in the thoracic or abdominal aorta. In their early stages they are general asymptomatic, and



may even rupture without producing significant symptoms. As enlargement occurs, encroachment on surrounding structures results in symptoms. In the thoracic aorta this may lead to hoarseness, dyspnea, compression of head and neck veins, or erosion of ribs, sternum or vertebrae. A pulsating abdominal mass at the level of the umbilicus heralds the presence of an abdominal aneurysm. Backache, intestinal symptoms or urinary complaints are the most frequent clinical manifestations. Severe, sudden pain may be an ominous sign, indicating expansion of an abdominal aneurysm. The pressure of an expansile pulsating mass in the epigastrium or upper abdomen is the single most important physical finding.

Solid tumors of the chest are sometimes difficult to differentiate from aneurysms, necessitating the use of angiocardiology for differentiation. Abdominal aneurysms rarely require aortography since diagnosis is usually possible on physical examination and plain roentgenograms of the abdomen, particularly a lateral projection to delineate the calcific changes in the wall of the dilated aorta.

The serious prognosis of aneurysmal disease has long been recognized. In dissecting aneurysms the prognosis is extremely grave, with death ensuing within 24 to 48 hours in a large percentage of cases. In other types of aneurysms the long range prognosis is very guarded, making surgical correction of the utmost importance.

The treatment of aneurysms requires excision of the lesion and restoration of arterial continuity with a synthetic prosthesis. In the early years of resective vascular surgery, arterial homografts were the conduits used to bridge defects. With advancements, synthetic fibers such as Teflon and Dacron have replaced homografts, and thus far have held up extremely well in large vessels.

The operative results support the conviction that surgical extirpation of aneurysmal disease leads to the best long range results. Operative mortality varies with the loca-

tion and type of lesion and is influenced by certain factors such as age, pre-existing heart disease and rupture of the aneurysm. A significant increase in life expectancy results in the operative versus nonoperative group of patients.

### Summary

In the past decade tremendous advances have been made in the field of vascular surgery. The development of arterial suture, graft replacement combined with the concept of localization of segmental disease, has permitted surgical treatment of debilitating and lethal lesions with the return of the patient to a gainful occupation.

The process of arteriosclerosis, due to as yet unknown inborn errors of metabolism, are accelerated and accentuated in the diabetic. This, however, does not preclude the diagnosis and treatment of favorable lesions as they occur.

The prevention of progressive cerebral ischemic lesions, relief of intestinal angina, and correction of hypertension are now within the realm of feasibility. Debilitating intermittent claudication can be assessed and a rational approach in the light of present day advances can be made. Finally, eventual lethal aneurysms can be extirpated and arterial continuity preserved. In the years ahead we are going to see increasing numbers of elderly people with the ravages of atherosclerosis placing demands on further technologic advances in medicine to effectively and safely treat such conditions.

### References

1. Hutchinson, F. C. and Yates, P. O.: Cervical Portion of Vertebral Artery: Clinico-Pathological Study, *Brain* 79:319, 1956
2. Goldblatt, H., Lynch, J., Hanzal, R. F., and Summerville, W. W.: Studies on Experimental Hypertension: I The Production of Persistent Elevation of Systolic Blood Pressure by Means of Renal Ischemia, *J. Exper. Med.* 59:347, 1934.
3. Dunphy, J. E.: Abdominal Pain of Vascular Origin, *Am. J. M. Sc.* 192:109, 1936.
4. Leriche, R. and Morel, A.: The Syndrome of Thrombotic Obliteration of the Aortic Bifurcation, *Ann. Surg.* 127:193, 1948.

Cutaneous disease is a not uncommon complication of diabetes mellitus. In the uncontrolled diabetic skin disease may point to this error in metabolism.

## Diabetic Lesions of the Skin\*

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The temptation is almost overwhelming to make the statement that almost any type of skin lesion can be produced by diabetes. Certainly it is safe to state that diabetes is related to a wide variety of dermatologic conditions, lesions and symptoms extending from itching without objective changes in the skin to those so characteristic that one is almost certain of an accompanying diabetes without knowing the results of tests for sugar in the urine and blood.

How often is a dermatosis the presenting symptom of diabetes? Almost every experienced physician will remember with satisfaction the cases of generalized pruritus, irritation of the groins, pruritus vulvae, balanitis, furunculosis and intertrigo, which proved to be due to an underlying diabetes. Just how frequent do the diabetics seek medical aid because of skin complaints? Several years ago a study was done at the Berlin University Skin Clinic which revealed that 27 out of each 1,000 patients were diabetics and only 13% of them knew of their disease. Of the diabetics, 59% had eczema (one-fifth of these eczema of the genital region) and 22% balanitis. Of course these patients were uncontrolled diabetics and it is doubtful that these figures would be duplicated were a similar study conducted today, because diabetic detection drives and more aggressive screening in general unearth more hidden and uncomplicating diabetics.

The following list, even though not complete, indicates the range of diabetic lesions of the skin.

### I. Pruritus

#### (a) Eczema

### II. Infection

#### (a) Bacterial

#### (b) Fungal

### III. Vascular

### IV. Xanthomatous

#### V. Vascular and xanthomatous

### VI. Trophic ulcers

### VII. Resulting from treatment

I. *Pruritus* as a symptom of diabetes occurs irregularly. Somerford<sup>1</sup> found hyperglycemia in 20% of 56 patients who itched while Campbell<sup>2</sup> found pathoglycemic curves in more than 50%. Itching may be present in slight hyperglycemia and it may be absent in severe cases. Individual differences are striking. These observations cannot be explained. All patients with hyperglycemia do not itch and hyperglycemia is not the only cause of diabetic itching. Even hypoglycemia may cause itching.

According to Urbach's<sup>3</sup> studies, the normal human fasting skin sugar amounts to only 58% of the blood sugar. Urbach points out that since the skin makes up 16% of the body weight, and considering the high sugar content of the skin, it is very likely that the skin is very important in sugar metabolism. He further found that in diabetics with problems such as eczema, urticaria, pruritus, and furunculosis, the sugar levels in the skin were higher than in diabetics without dermadromes, even though the blood sugar levels were about equal.

The precise mechanism by which itching is produced is not known. Local tissue factors unrelated to the amount of sugar in the skin may be involved. Injection of glucose into the normal skin does not cause itching. Patients with well-controlled diabetes rarely complain of itching but a slip in the diet or a break in the routine may be followed by pruritus. Greenwood<sup>4</sup> observed that pruritus occurred in 7% of 500 patients with well-controlled diabetes.

(a). It is fairly easy to understand that patients who itch may well develop eczema-

\*Presented at the meeting of the Tennessee Diabetes Association, April 10, 1962, Memphis, Tenn.

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tous skin changes. Intertriginous eczema, especially beneath the breasts of obese women, and eczema of the genital area and groins of both sexes, is strongly suggestive of an underlying diabetes and demands testing of the urine and blood for diabetes. Twenty or thirty years ago, many patients with eczema who did not have hyperglycemia or glycosuria were nevertheless thought to have abnormal sugar metabolism and treatment of this type of eczema often included the recommendation of a low carbohydrate diet and even the administration of small amounts of insulin. This attitude is not so widely accepted today. It must be stated that, even in the presence of frank diabetes, eczema by no means always clears following management of the diabetes.

## II. Infection.

(a). Infections are notoriously common in diabetics. These may be due to bacteria—usually staphylococci—or to fungi, most often monilia. The infections may be a widespread pyoderma, furuncles or carbuncles. The mechanism by which these infections develop is thought to be related to increased sugar within the skin and on the skin. Sweat from diabetic patients contains more than twice as much sugar as sweat from nondiabetics. No doubt other factors, such as those unknown and immeasurable factors of virulence and resistance, also must be operating. It is imperative to state that patients with infections are strongly suspected of having an accompanying diabetes.

(b). Fungus infections, of course, can be of any type. The diabetic can have any fungal infection the nondiabetic might have; but yeast infections involving the groins, genitalia, inframammary areas, abdomen, internatal cleft, the webs between the fingers, and the perionychial tissues are the most common fungus infections encountered in diabetics. The bright red, sharply bordered intertrigo surrounded by small pustular satellites is very suggestive of moniliasis and, therefore, of diabetes. Oral moniliasis may be encountered in infants but is infrequent in adults.

Diabetic vulvovaginitis is usually a mycotic infection and is encountered in about 50% of women with diabetes. The clinical

picture is rather characteristic. The vulva is tender and is slightly swollen and has a reddish-blue color. Abrasions and excoriations are encountered. The inflammation is usually limited to the moist surfaces but may extend to the anus, crural folds and mons veneris. Small white curd-like spots on the labia minora are made up of colonies of yeast. Actually it is the yeast infection and not the diabetes that causes the vulvitis.

The sugar fermenting *Candida* find an ideal medium in the glucose-containing urine and tissues. Optimal growth of yeast and also of staphylococci is found on media with 150 to 200 milligrams per cent of sugar—a figure which corresponds well to the sugar content of serum in many diabetics.

Diabetic balanitis is much rarer than vulvitis and is seldom encountered in circumcised men whose glans penis is dry and does not provide the yeasts with such a favorable moist medium.

III. *Vascular*. Since diabetes occurs more frequently in the elderly and middle-aged, it would be expected that vascular problems would be observed more frequently in this group. But vascular problems occur in diabetics with greater frequency than in nondiabetics. Gangrene is one of the most serious complications of diabetes, both from the nature of the lesion itself and from the wide path it opens to septic invasion of the body.

Bell<sup>5</sup> concluded that the diabetic process intensifies and accelerates to an astonishing degree vascular changes which are present to a lesser extent as part of the aging process in the extremities of nondiabetics. He observed that if only gangrene due to atherosclerosis is considered, gangrene developed nearly forty times as frequently in diabetics as in nondiabetic subjects.

The precise mechanism of vascular complications is not understood. Disturbance in lipid metabolism does not supply a fully satisfactory explanation. Examination of the vessels does not reveal differentiating findings between diabetic and nondiabetic subjects.

Perhaps atheromatous thickening of the intima may be expected to be greater in the diabetic. Moist gangrene is more frequent in diabetics but this prevalence is less

marked since the introduction of antibiotics. Arterial occlusion in typical diabetic gangrene is a gradual process—the result of slow progressive encroachment on the lumen of the artery by intimal thickening and frequently by heavy deposits of lipid. Therefore there is time for the development of collateral circulation. Even though the patient may experience pain and disability during this period of readjustment, in time an equilibrium is established where the combined blood supply from both main vessels and collaterals will be adequate for the ordinary needs of the limb, but any unusual stress will tip the balance.

IV. *Xanthomatous*. It is important to distinguish between xanthelasma and xanthoma diabeticorum. The latter is apparently definitely related to hyperlipemia, whereas in xanthelasma, hyperlipemia does not occur much more frequently than in the general population, and in only about one-half of those affected is there an elevation of serum lipids. Xanthoma diabeticorum may occur quite suddenly, so the term *xanthoma eruptivum* is applied at times.

These papular or nodular lesions are usually symmetrically distributed, often brilliant yellow in color associated with a red periphery, being more numerous on the outside of the back and forearms and, especially, about the elbows and knees where they may become confluent. Histologically they are indistinguishable from xanthoma tuberosum, being composed of lipid-containing macrophages with occasional "Touton giant cells." There may be some inflammatory reaction and fibroblastic proliferation. If the lesions are undergoing involution, which at times happens, especially if the diabetes is being brought under control, cholesterol and other lipoids may be found extracellularly as well as intracellularly. All patients, diabetic as well as nondiabetic, who have hyperlipemia do not develop xanthomata. Aldersberg, Parets and Boas<sup>6</sup> believe that the tendency to xanthoma is inherited as an "incomplete" dominant trait in persons who carry two abnormal genes for cholesterol, and that atherosclerosis is also frequent in these people.

The presence of xanthoma is a strong indication that the diet needs revision from

the standpoint of lowering the lipid component.

V. *Vascular and Xanthomatous*. Necrobiosis lipoidica diabeticorum is a mixture of vascular changes and lipid deposition in the skin. When first described the readily recognized condition was seen only in diabetics, but during recent years it has been observed in many nondiabetics.

The clinical picture is that of one or several waxy, glazed, sharply demarcated, irregularly outlined plaques, invariably on the legs, yellow in the center and pale red or violaceous at the periphery. The overlying skin is thin and atrophic and the dilated bloodvessels are easily seen. The center gradually becomes depressed and atrophic and may break to form an ulcer. Histologically, the epidermis may appear normal or atrophic, and may be absent due to ulceration. Poorly defined areas of necrobiosis of collagen occur throughout the dermis, especially the lower portion. The collagen appears homogeneous, swollen and broken up. There is perivascular inflammatory infiltrate composed of fibroblasts, lymphocytes, histiocytes and occasional groups of epithelioid cells. The bloodvessels, particularly in the middle and lower dermis, exhibit fibrosis of their walls with proliferation of their endothelial lining. This process may lead to partial and, occasionally, even to complete occlusion of the lumen. Fat staining usually but not always reveals numerous granules of lipid extracellularly in the areas of collagen degeneration. At times no lipid can be demonstrated—a finding indicating that the presence of lipid may be a purely secondary phenomenon associated with collagen degeneration. Some investigators believe that the necrobiosis of collagen is due to vascular changes and that in cases in which diabetes exists, the diabetes is the cause of the vascular changes. It is this unsettled state of knowledge regarding the histogenesis of this condition which justified classifying necrobiosis, at least at present, as vascular and xanthomatous.

VI. *Diabetic Ulcers*. Trophic ulcer of the foot is not infrequently found associated with diabetes and is not different in appearance from other trophic ulcers of the feet. These occur most often on the ball or



on the plantar surface of the great toes, that is, at points of increased pressure. The patients are usually overweight, rarely young. The precise mechanism by which these ulcers occur is not understood but it is thought to be neurogenic. At times diabetics have severe neuritis, and since trophic ulcers occur in other neuropathies it is only natural to explain all these ulcers, which in appearance are indistinguishable, as being due to involvement of the spinal cord.

VII. *Results of Treatment.* Skin changes which are the result of treatment are legion and include the sweating and paleness of insulin shock, furuncles at the site of insulin injection, fibrosis and atrophy, usually on the thighs following administration of insulin, and yellowish discoloration of the skin due to the consumption of lipochromic diet high in foods such as yellow turnips and carrots. Another possible explanation for the yellowish discoloration is that there is a disturbance in lipid metabolism in diabetes with concomitant failure to synthesize vitamin A from its precursor carotene and,

possibly, disturbed excretion of the carotene resulting in an accumulation of the lipochrome in the body.

These are the more common dermadromes of this fascinating metabolic disease, diabetes mellitus, which affects so many and which has been studied so extensively and about which so much, yet actually so little, is known.

### References

1. Somerford, A. E.: Blood Cholesterol Values in Cases of Generalized Pruritus, *Brit. J. Dermat.* 55:97, 1943.
2. Campbell, G. G.: The Relation of Sugar Intolerance to Certain Diseases of the Skin, *Brit. J. Dermat.* 43:297, 1931.
3. Urbach, E. and Lentz, J. W.: Carbohydrate Metabolism and the Skin, *Arch. Dermat. & Syph.* 52:301, 1945.
4. Greenwood, A. M.: A Study of the Skin in Five Hundred Cases of Diabetes, *J.A.M.A.* 89:774, 1927.
5. Bell, E. T.: Incidence of Gangrene of the Extremities in Nondiabetic and Diabetic Persons, *Arch. Path.* 49:469, 1950.
6. Aldersberg, D., Parets, A. D. and Boas, E. P.: Genetics of Atherosclerosis, *J.A.M.A.* 141:246, 1949.

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### THE CARBOHYDRATE INTOLERANCE OF UREMIC PATIENTS. Fred B. Westervelt, Jr., and George E. Schreiner, *Ann. Int. Med.* 57:266, 1962.

A substantial number of investigators have observed hyperglycemia in patients with renal failure.

In this study, 15 patients who had chronic uremia were evaluated and compared to 3 nonazotemic diabetics as well as normal subjects and patients without metabolic disease in an effort to confirm and study the impaired glucose tolerance in uremic subjects.

Twelve of the 15 azotemic patients had abnormal glucose tolerance tests without fasting hyperglycemia. This abnormality was found to be insulin resistant and tolbutamide sensitive. It was found that the intravenous tolbutamide tests provide a means of differentiating this azotemic "pseudodiabetes" from food diabetes with azotemia. This has clinical significance. As a result of a wide range of metabolic studies, the authors set forth a hypothesis to explain the observed abnormality. (Reviewed for the Middle Tennessee Heart Association, by Fred Goldner, M.D., Nashville.)

## CLINICAL NOTES FROM THE TENNESSEE HEART ASSOCIATION

### AN APPROACH TO THE DIAGNOSIS AND MANAGEMENT OF PERIPHERAL ARTERIAL DISEASE\*

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In the past few years, the problems of clinical vascular disease have expanded into some rather complex and controversial areas. Because of the recent accumulation of techniques and concepts relevant to the clinical management of the patient with peripheral vascular disease, a review of a practical approach to the problems of diagnosis and management of peripheral arterial disease, is thought justified.

To indicate an appropriate perspective from which to inspect these problems, a simplified schematic analogy of the essential functional elements of the cardiovascular system is presented in figure 1. There has

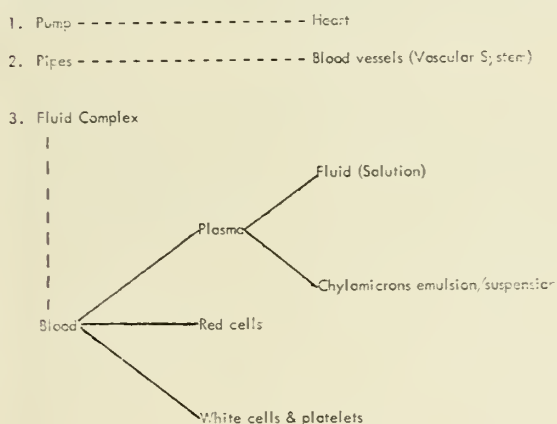


FIG. 1.

been a tendency in clinical fields to separate the vascular system (e.g., the "pipes") from the other two elements of the circulatory system, and attempt to consider this entity by itself in relation to illness. This is obviously ill-advised, however, recalling that a basic function of the cardiovascular system is to maintain the organism by providing an adequate flow of oxygenated blood to the body tissues, and an adequate

return of venous blood to the lungs, making an adequate perfusion of tissue capillary beds available for the exchange of blood gases and nutritive materials. In order to accomplish this objective, the system must contain the pump, the pipes, and the fluid-complex as illustrated in figure 1. Thus, abnormalities of cardiac function, function of the vascular tree, or elements of the blood, may manifest themselves as a peripheral vascular disease syndrome.

From the above the somewhat oversimplified conclusion may be extracted: that the primary potential dysfunction of the peripheral arterial system is a failure to deliver enough blood flow, due to some degree of arterial occlusion or pump-failure. For purposes of simplicity, during the remainder of this discussion considerations will be limited to the second and third of the three part complex indicated in figure 1, omitting the important considerations of myocardial disease in full realization of this artificial division.

The symptoms of the primary dysfunction are, then, those of ischemia, infarction, or gangrene of the involved organs or members of the body. The precise symptomatology will vary with the location but are basically similar:

1. Pain (for example, angina, headaches, abdominal pain, claudication, etc.).
2. Color change (pallor, rubor, cyanosis, etc.).
3. Atrophy (if progression of dysfunction is slow).
4. Necrosis (if progression of dysfunction is fast).
5. A failure of specific function of the affected organ or member is the net result of items 3 and 4.

In order to facilitate the development of a useful approach to the diagnosis of peripheral arterial diseases, it is practical to categorize the diseases in groups which are related to appropriate available therapy. It is therefore desirable to skip ahead for a few thoughts drawn from considerations regarding treatment. The general categories of available treatment are:

- (1.) Removal of the obstructing lesion from the lumen of the blood vessel (e.g., endarterectomy, resection and graft, bypass graft, patch graft, or on-lay graft).

\*Supported in part by the John and Mary R. Markle Foundation, and the Tennessee Heart Association.

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(2.) The induction of dilation of spastic vessels either by drugs or by surgical extirpation of the sympathetic nerve supply to the involved vascular bed (e.g., vasodilator drug therapy, sympathetic block, sympathectomy).

(3.) Attempts to dissolve or prevent the progression of clots by chemotherapeutic agents (e.g., fibrinolysin, plasmin-activators, anticoagulants, etc.).

(4.) Attempts to inhibit or reverse abnormal sluggishness of blood flow (e.g., blood sludge) and thus improve the circulation through diseased vessels, again by chemotherapy (such as low molecular weight dextran infusion, 5% albumin infusion, heparinization). The sluggish flow associated with intravascular hemagglutination (blood sludge) may be regarded as producing a relative partial "plastic occlusion" of the microvascular circulation.

From these considerations, it seems logical to categorize arterial occlusion or obstruction into three very general headings: 1. Mechanical, 2. Spastic, 3. Plastic. Tables 1, 2, and 3 indicate the headings into which

Table 3

## "PLASTIC" OCCLUSIVE

Intravascular hemagglutination or "sludge" associated with:

- i) Cryoglobulins
- ii) Leukemia or lymphomas
- iii) Myeloma
- iv) Cold hemagglutinins
- v) Trauma, burn, and pump oxygenators
- vi) Malaria and other infectious diseases. *Septic Shock*.
- vii) Hyperlipemia and xanthomatosis
- viii) Hypothermia

various clinical syndromes of vascular disease would fall. It is obvious that there is some overlap of such categorization. For example, arteriosclerosis obliterans, although primarily producing circulatory dysfunction by mechanical occlusion, may in addition inflict a significant element of circulatory embarrassment by either the vasospasm associated with arteriosclerotic occlusion, or by compromising circulation through the development of blood sludge associated with hyperlipemia. In such an instance it is desirable from the standpoint of management to estimate the degree to which each of these elements contributes to the total compromise of the circulation.

## Diagnosis

Thus, a practical approach to diagnosis and management would seem to include an evaluation of these three parameters of pathologic physiology, so as to make an appropriate decision regarding the election of the mode of treatment.

The technical methods currently available to evaluate these parameters, although far less than ideal, are frequently not utilized to their greatest benefit.

Methods available to evaluate the mechanical, spastic, and plastic parameters of vascular occlusion are:<sup>1</sup>

(1.) The time-honored *history* and *physical examination* of the patient. The classical history of cyclic episodes of cyanosis and pallor of the terminal digits in Raynaud's disease gives a clear indication of the spastic nature of this problem, for example. This method of diagnostic differentiation is so well known, so commonly practiced, and so thoroughly described in numerous writings, that further space will not be utilized in its consideration in this text. Although indispensable as a preliminary screening method, the history and physical examination are obviously inadequate to differen-

Table 1

## MECHANICAL OCCLUSIVE

- a. Arteriosclerosis obliterans (atherosclerosis with or without calcification, thrombosis, etc.)—Burger's disease—
- b. "Endarteritis" (end stage of Raynaud's or allergic arteritis)
- c. Thrombosis
  - i) Traumatic
  - ii) "Idiopathic"
  - iii) Arteriosclerotic (viz: a.)
- d. Embolism
  - i) Rheumatic heart disease with mural thrombus
  - ii) Foreign body
  - iii) Lipid
  - iv) Proximal aortic disease (calcium/clot)
  - v) Subacute bacterial endocarditis
- e. Costocervical syndrome and variants
- f. Carpal tunnel syndrome
- g. Anterior tibial compartment syndrome
- h. Extrinsic tumor

Table 2

## SPASTIC OCCLUSIVE

- a. Raynaud's disease and variants
- b. Collagen disease
- c. Post-frostbite syndrome
- d. Causalgia
- e. Post central nervous system trauma or stroke
- f. Reflex sympathetic dystrophy
- g. Partially obstructive arterial disease (mechanical)
- h. Poisons
  - i) Ergot
  - ii) Lead
  - iii) Thallium

tiate subtle degrees of mechanical, spastic, and plastic occlusion.

(2.) *Oscillometry.* This simple method essentially records the amount of pressure exerted upon the cuff of a sphygmomanometer by a pulsating extremity at various blood pressure levels. The oscillometer measures the lateral thrust and expansibility that is exerted upon the tissues with each pulse beat by all of the blood vessels within that level of the member encircled by the cuff. Measurement of pulse amplitude obtained with the oscillometer is useful in determining the level of obstruction of a major artery in an extremity, providing a quantitative evaluation of the force of a pulsation for future reference, and serving as a rough index of the elasticity of the vessels which are being measured. There is no useful correlation between the force of a pulse as measured with the oscillometer and the amount of blood which is flowing through that portion of the extremity encircled by the cuff. Nonpulsatile blood flow is not revealed by the oscillometer.

(3.) *Skin and muscle temperature* measured by thermocouple or thermistor. Since the temperature of the skin (and to a lesser extent the muscle) is directly dependent upon the volume flow of blood through the tissue, measurements of these temperatures provide indirect estimates of arteriolar and capillary blood flow under constant environmental conditions. The wide variation of physiologic cutaneous vasomotor tone generally limits the usefulness of this method essentially to the evaluation of relative changes produced by chemotherapeutic or sympatholytic maneuvers designed to inhibit arteriospasm in vascular disease detected by other means. The method is particularly useful in evaluating the potential benefit to be expected from the administration of a specific vasodilating agent, or the potential effect of sympathectomy, by evaluating the result of a properly performed sympathetic block. Such evaluations are of distinct value in excluding the possibility of inflicting further damage upon an already ischemic extremity (because of mechanical occlusive disease) subjected to further ischemia by the induction of generalized vasodilatation or by a poorly-

electected sympathectomy. Circulation through an extremity diseased by mechanical occlusion of the vascular system (without significant reflex vasospasm) can only be further compromised by the production of vasodilatation elsewhere in the body. A drop in skin temperatures following sympathetic block or infusion of a vasodilator in a limb made ischemic by mechanical occlusive arterial disease is therefore an absolute contraindication to the use of either sympathectomy or vasodilator drug therapy.

(4.) *Plethysmography.* Several types of plethysmographs are currently commercially available. All of these instruments, despite their basic differences in operational principles, indicate indirect measurements of blood flow based upon changes in rate of blood flow with each pulse-beat. Therefore these instruments also measure only the pulsatile component of blood flow to a portion of the body. The nonpulsatile flow, as occurs through small collateral circulation, cannot be properly assessed by this method. The impedance plethysmogram is probably the most versatile and simplest of the available models.

The oscillometer, the thermocouple, and the plethysmogram provide most helpful data when used to evaluate the effect of a therapeutic maneuver designed to produce selective or general vasodilatation (vasodilator infusions, sympathetic block, peripheral nerve block, epidural or subdural anesthesia), or to evaluate the result of surgical maneuvers designed to restore pulsatile blood flow through an obstructed major artery.

(5.) *Arteriography* (multiple cassette changing technique, or cine radiography). This method obviously provides information mainly regarding the patency of large blood vessels, such as the aorta, femoral-popliteal system, carotid system, and the like. The smallest range of blood vessels which may be routinely and satisfactorily examined by this technique is the coronary artery system. Obviously the method gives little or no information regarding arteriolar or capillary perfusion, nor arteriovenous shunting. The method is most useful in determining the site of mechanical occlusion and the extent of such disease. Collateral circulation may also be roughly estimated.



(6.) *Conjunctival angiomicroscopy.* Examination of the arteriolar, venular, and capillary circulation of the human bulbar conjunctiva with a medium-power dissecting microscope, utilizing an ophthalmic lamp for a light source, has provided valuable data regarding the presence and degree of intravascular hemagglutination ("blood sludge") in clinical syndromes. This technique, long in use by research physiologists as a method of examining directly a representative sample of the arteriolar circulation in the body, has enjoyed an increasing use by clinicians within the past five or six years. The method is simple, readily available, and innocuous. Its clinical application is limited only by the ability of the examiner to interpret what he sees. Some experience in visualizing the normal microcirculation is necessary before intelligent interpretation of diseased microvascular beds may be accomplished. Useful data is largely restricted to: (a) the presence or absence of severe arteriolar spasm; (b) the state of erythrocyte suspension (e.g., "sludge") in the arterioles, not the venules

or capillaries; (c) the apparent rigidity of clumps within the arterioles, resulting in occlusion at the precapillary arteriolar level, rather than the size or number of clumps present in the blood; and (d) gross changes in the velocity of arteriolar blood flow which may easily be estimated after some experience with the use of a micrometer disc in the ocular of the microscope. The usefulness of this method of evaluating microcirculation has recently been studied and described in some detail by several authors.<sup>1-4</sup> The information derived from this examination is of prime significance in evaluating the parameter of *plastic occlusion* of the circulation.

From the above methods of analysis, the decision can usually be made as to whether a given clinical syndrome is due to arterial disease, the most likely specific type of arterial disease, and the significance of the mechanical, spastic, or plastic parameters of pathologic physiology as major or minor offending components of the total disease process.

*(To be continued)*

## CLINICOPATHOLOGIC CONFERENCE

### Veteran's Administration Hospital\*

#### Hypothalamic Angioma With Panhypopituitarism

Aaron M. Lefkovits, M.D. and J. M. Young, M.D.

**Present Illness.** This was the 17th admission to this hospital of a 38 year old white man whose history dated back to about 13 years of age when he began to have bilateral headaches and diminution of vision. This improved but recurred at the age of 18. Two years later a craniotomy was done at another hospital to investigate these symptoms. The right optic nerve was visualized at this time and thought to be atrophic, but no other disease was found. Three years after this he developed a right hemiplegia and a left facial paralysis. This gradually cleared up over an 8 month period. Two or three years later he began to put out huge quantities of urine, as much as 30 liters a day. The urine was of low specific gravity and did not concentrate well on restriction of fluid. This polyuria responded well to Pitressin. In the next few years there was further diminution in his acuity of vision, and he developed episodes of mental clouding and confusion. An EEG. showed generalized abnormality with lateralization to the left occipital region. The attacks were controlled with Dilantin.

During one admission after this it was noted that he had a very striking myxedematous appearance. Investigation showed a B.M.R. of  $-34$ , a cholesterol of 680 mg.%, and a 24 hour radioactive iodine uptake of 21.7%. He was given desiccated thyroid, to which he did not respond, and was re-admitted for further study.

On this admission his radioactive iodine uptake was 0.8% in 6 hours and 0.9% in 24 hours. Uptake after stimulation with TSH. was normal. He was noted to show a change in secondary sex characteristics, such as loss of hair and atrophic testicles. Testicular biopsy showed decreased spermatogenesis. His urinary 17-keto-steroid excretion was 3.5 mg. His 48 hour eosinophil test was 140 with a drop to 120. Tri-iodo-thyronine was given in place of thyroid and he was also placed on cortisone and testosterone. He did fairly well on this therapy, except for an attack of shortness of breath which was felt to be on a basis of anxiety and hyperventilation. Several months later he was admitted again with vague chest pain, shortness of breath and occasional paroxysmal dyspnea.

**Examination.** P. 72, T. 98.6°, R. 18, B.P. 120/84. He appeared well developed, moderately obese with a pale skin. The left pupil was dilated and did not react to light. Vision was absent in the left eye, and temporal vision was absent in the right eye. The fundi were negative except for

pallor of the discs. The lungs were clear. Heart  $-A_2$  was greater than  $P_2$ , otherwise negative. The testicles were atrophic. Deep tendon reflexes were absent except for ankle jerks which were equal and active, bilaterally. Cranial nerves were intact as was the sensory and motor examination. There were scattered hemangiomatic lesions over the trunk. Cerebration was slow and speech was halting.

**Laboratory Data.** Admission RBC count was 5,360,000, Hgb. 14.9 Gm., hematocrit 47%, WBC count 13,100 with neutrophils 61, lymphocytes 33, monocytes 3, eosinophils 3. The urine showed a reaction of 5.5, specific gravity 1.020, albumen 2 mg., microscopic—rare WBC and RBC. STS were negative. Spinal fluid showed protein of 68 mg.%, globulin—trace, microscopically 3 lymphocytes/hpf. B.M.R. was  $-17\%$ , cholesterol 265 mg.%, 17 ketosteroids, 3.5 mg. in 24 hours, 17-hydroxycorticosteroids were 5.5 mg. per 24 hours, PBI was 2.6 mg., prothrombin 100%. Several EKG.'s showed nonspecific T-wave changes over the pericardium. The BUN. was 17 mg.%,  $\text{Co}_2$   $-21.5$  mEq/L. Multiple electrolyte determinations ranged from 146 to 174 mEq/L. for sodium and 108-134 mEq/L. for chlorides. Potassium was always within normal range. Febrile agglutinations were negative.

**X-Ray Studies.** The chest was negative. The sella turcica was smooth in outline. An osteoplastic flap involving the right frontal bone with metallic clips *in situ* was present. Left and right cerebral arteriograms revealed no abnormality. Ventriculogram showed bilateral enlargement of the lateral ventricles. There was evidence of a filling defect in the anterior and inferior portion of the 3rd ventricle. The 4th ventricle was not well visualized.

**Hospital Course.** On admission the patient was well controlled on replacement therapy consisting of cortisone, Pitressin, testosterone, and tri-iodo-thyronine. The tri-iodo-thyronine was discontinued for a short time and he began to have retrosternal discomfort and dyspnea, as well as some peculiar behavior. For these reasons this therapy was again instituted. Shortly thereafter he became disoriented, attempted suicide, and became maniacal. He was heavily sedated with chlorpromazine and phenobarbital. Several hours later he was found comatose, in shock with no demonstrable blood pressure, with a rapid pulse and a hyperthermia of 105°. He was treated with alcohol rubs and levophed intravenously, responded and also became well orientated again. A blood culture taken during this episode was positive for *Streptococcus fecalis*. While further studies were being done he developed a severe pneumonitis in the left lower lobe. This was treated with antibiotics and cleared completely. After a neurosurgical evaluation, an operation was performed.

#### Clinical Discussion

DR. AARON M. LEFKOVITS: This man presented many interesting symptoms and

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signs. I believe that you will agree with me that, with the exception of some of the manifestations, most of these symptoms and findings could be explained on the basis of pan-hypopituitarism and involvement of the hypothalamus. Some features, however, are disconcerting. I do not know what to make of the episode of right hemiplegia and left facial paralysis which this man had at 23 years of age. Was it part of the process which was responsible for the hypopituitarism and the hypothalamic syndrome, or did he have an additional independent lesion? There is a syndrome, the so-called Millard-Gubler syndrome, of crossed paralysis, which results from occlusion of a small branch of the basilar artery or of one of the medial pontine branches and leads to involvement of the ipsilateral nucleus of the 7th nerve and the pyramidal tract of the opposite side. On the other hand, it may well have been part of the process which caused the pan-hypopituitarism. Another disturbing fact is that this man had a craniotomy. This was done at another hospital. If he did have a tumor pressing on the optic nerve and/or optic chiasm, causing his visual difficulties, it seems very unusual that this tumor was not found at that operation unless, of course, it was so small that it was overlooked. I think that the episode of disorientation during which he attempted suicide can be explained either on the basis of the hypothalamic syndrome which this man undoubtedly had, or the administration of thyroid hormone. As you know, patients who have pituitary myxedema, if given thyroid hormone, sometimes develop thyroid crises; such crises consist of any or all of the following manifestations: extreme irritability, delirium, coma, hyperexa, episodes of vomiting and diarrhea. At any rate, he improved. Another unusual feature is the hyperchloremia and hypernatremia. I have never seen a patient who had 174 mEq/L of sodium and 134 mEq/L of chlorides. Such elevation of serum sodium and chloride levels, however, have been noted in patients with diabetes insipidus. Patients who have diabetes insipidus, if deprived of water, can become dehydrated within a few hours, and during such periods, sodium and chlorides are re-

tained and may reach high levels. Such elevations of serum sodium and chlorides have also been noted in diabetes tenuifluus or anti-diabetes insipidus, a syndrome described by Baker.<sup>1</sup> This syndrome is the converse of diabetes insipidus; it resembles a condition produced in rats by damaging the hypothalamus in the region of the ventromedial nuclei. Episodes of sodium chloride retention are characteristic of this syndrome; in some patients it has developed under conditions of emotional stress. Perhaps this man did have this unusual condition.

I think that before we go any further it might be well to examine the x-rays, particularly those of the skull (Fig. 1).

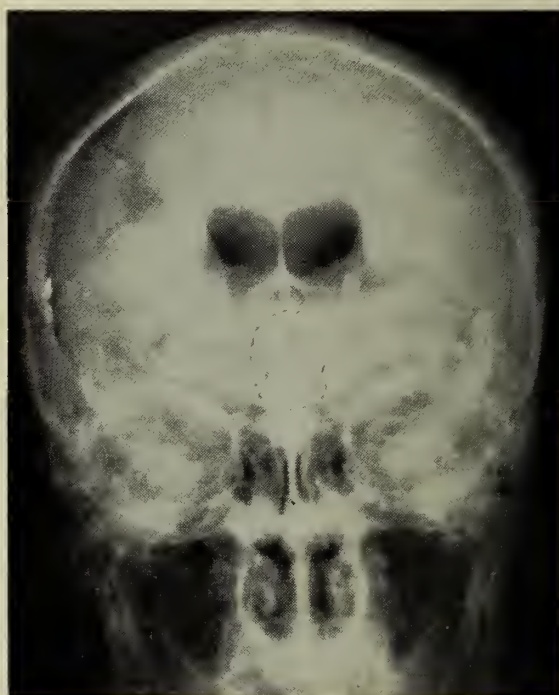


FIG. 1.

These interpretations do not confirm the internal hydrocephalus which is suggested in the protocol. I had hoped that the x-rays would show calcification either in the sella or in the suprasellar region. Such calcifications would support my belief that this man had a craniopharyngioma.

Getting back to our discussion, as I stated before, I believe that all the manifestations that this man had can be explained on the basis of involvement of the hypothalamus and panhypopituitarism. The episodes of mental clouding and confusion, which responded to dilantin and which sug-

gest epilepsy, are seen in patients who have involvement of the hypothalamus. Such seizures are part of diencephalic autonomic epilepsy. Such patients often manifest so-called "rage reactions"; perhaps during one of these episodes our patient became manic and attempted to commit suicide. These patients also have behavior changes; they become agitated, highly excitable and delirious, may have fluctuating dementia, apathy and may show manifestations of Korsakoff's psychosis. They may also have disturbances of lipid metabolism. Our patient was described as moderately obese with a pale skin. While this description is rather vague, it fits in fairly well with the picture of hypothalamic obesity. Such patients may also show changes in the rate and depth of respiration and our man did have episodes which were thought to be episodes of hyperventilation. There are other manifestations of the hypothalamic syndrome which for the sake of brevity will not be discussed.

Apparently the doctors who took care of this man knew that he had panhypopituitarism, for they gave him substitution therapy. The patient's problem later was the progressive loss of vision which led to neurosurgical consultation and eventually to operation.

The region of the hypothalamus is depicted in figure 2. As you will recall, the

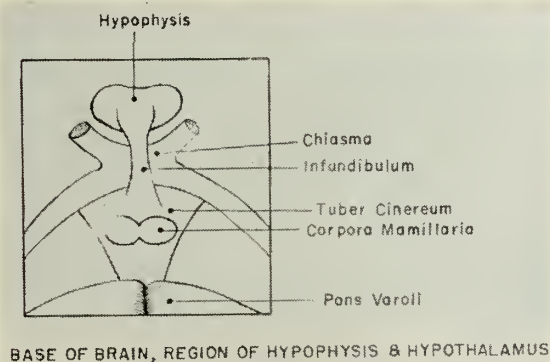


FIG. 2.

hypothalamus consists of the tuber cinereum, the mammillary bodies, the peduncles, and the pituitary gland. The pituitary gland itself is derived from two separate anlage; the anterior lobe or adenohypophysis develops from a pocket in the pharynx—Rathke's pouch. The connection with the pharynx is later obliterated; how-

ever, cell remnants of it occasionally persist; these vestiges are said to be the origin of craniopharyngioma in later life. The posterior lobe or neurohypophysis develops from a downward evagination of neural ectoderm from the floor of the diencephalon. The anterior lobe is said to surround the posterior lobe in the manner in which a baseball glove surrounds the ball.

The optic chiasm and arrangement of the optic fibers is represented in figure 3. As

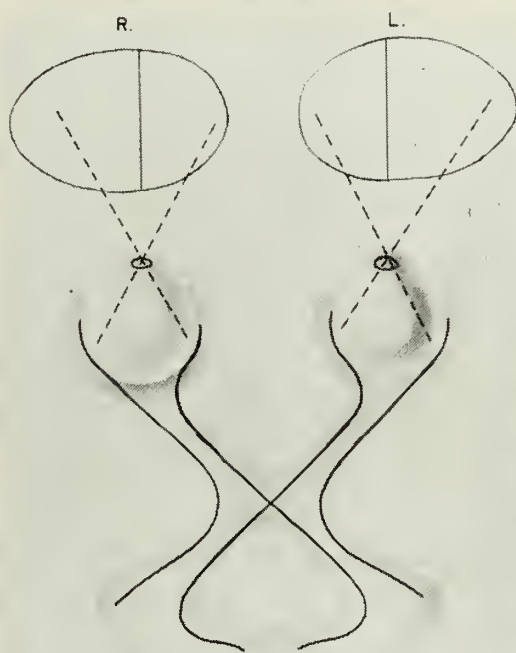


FIG. 3.

you know, the nasal fibers cross at the optic chiasm, supply the medial halves of the retinae and carry light impulses from the opposite or temporal halves of the visual fields. It is for this reason that a destructive process involving the middle of the optic chiasm will at first cause temporal hemianopsia. As the process progresses there is increasing compression of the chiasm and/or of the optic nerves and partial or complete atrophy of one or both optic nerves may ensue. The growth of the lesion, whatever its nature, is not always symmetrical. For this reason, varying forms and degrees of visual impairment may be found in these patients; the type and extent of visual impairment depends upon



the part of the optic tract which is involved. For instance, complete loss of vision may be present in one eye while in the other eye various forms of hemianopsia may be present.

This man also had diabetes insipidus. By the way, the term "diabetes insipidus," of course, means that the urine of these patients is tasteless; the term originated in the days when doctors tasted the urine and it has survived ever since. Diabetes insipidus is caused by decrease or absence of antidiuretic hormone (ADH) and can result from any lesion which involves the posterior lobe of the pituitary, the supra-optic nuclei or the nerve pathways between them. It is believed that in addition to any one of these lesions, the presence of the anterior lobe of the pituitary via the thyrotropic and growth hormones and adrenal steroids, is necessary for the development of permanent diabetes insipidus. Recently accumulated experience, since hypophysectomies have been done for the control of neoplastic and other diseases, indicates that this is not necessarily so, however. Individuals who have diabetes insipidus, as you know, excrete large amounts of urine—as much as 50 liters daily of low specific gravity. Our patient excreted 30 liters of urine of low concentration. Diabetes insipidus is not always permanent. Apparently this patient did not have diabetes insipidus during his last admission to this hospital, for nothing is said in the protocol about his urinary output during that hospitalization, and the specific gravity of the urine was 1.020; its disappearance may have resulted from destruction of the anterior pituitary. Remember that we said earlier that function of the anterior lobe of the pituitary may be necessary for its persistence. Diabetes insipidus may be associated with a number of conditions. These are as follows:

1. Tumors in the region of the 3rd ventricle:
  - Chromophobe adenoma
  - Craniopharyngioma
  - Glioma of hypothalamus
  - Medulloblastoma
  - Metastatic carcinoma
  - Multiple angioma
  - Endothelioma
  - Meningioma
2. Infectious diseases:
  - Tuberculosis
  - Syphilitic gumma
  - Encephalitis

Meningitis

3. Traumatic lesions

4. Granulomas:

Hand-Schuller-Christian disease

Sarcoidosis

Now, let us return to hypopituitarism. Any lesion which destroys the adenohypophysis will result in hypopituitarism. All conditions which are associated with diabetes insipidus may also cause hypopituitarism. Here again the process is not uniform, it does not always develop rapidly, not all the target glands of the pituitary are involved in the same degree of severity, and the period during which the full picture develops may vary from months to several years. For this reason, many variations can be found in the resulting clinical pictures. Initially the individual may have impairment of the thyroid only and develops myxedema; later he may develop gonadal deficiencies, as our man did. Still later he may develop deficiency of adrenocortical function. Thus, depending on the rate of growth and site of tumor, varying clinical pictures may be found in these patients. To refresh your memory, the anterior pituitary consists of three types of cells, (1) alpha or eosinophil cell, (2) beta or basophil cell, and (3) chromophobe or chief cell. The alpha and beta cells are believed to develop from chromophobe cells. Tumors of the pituitary may develop from any of these types of cells, but the symptoms they produce are due to destruction of the pituitary itself, and/or pressure on neighboring structures or disturbances of the hypothalamus. Tumors arising from the eosinophil cells produce the picture of hyperpituitarism. If the tumor develops during the preadolescent period, gigantism will result; if it develops in the adult, acromegaly will result. The most common tumor of the pituitary, however, is chromophobe adenoma. These adenomas are said to comprise two-thirds of all the pituitary adenomas and one-fifth of all intracranial tumors. They are non-secretory, produce symptoms through pressure on the neighboring organs including the pituitary itself and they occur mainly in young adults. They are rarely seen in individuals under 15 years of age; their incidence is the same in both sexes. They arise most often near

the hypophyseal stalk and, as they enlarge, they compress the pituitary against the walls of the sella and balloon out the sella. They may break through the diaphragm and press upon the chiasm, on the hypothalamus or other neighboring structures and may produce varying pictures of the hypothalamic syndrome.

In Cushing's series of 2023 of intracranial tumors verified at autopsy or surgery, 4.5% were craniopharyngiomas. As I mentioned before, craniopharyngiomas arise from the residual cells which remain in the hypophyseal stalk of the pituitary. These cells were first identified and reported by Zenker in 1857 and Luschka in 1860; however, Erdheim in 1904 first reported that craniopharyngiomas probably developed from these residual cells. Craniopharyngiomas may vary in size from that of a pea to a billiard ball. At first they are usually solid, later they may undergo cystic degeneration and become filled with brownish-yellow fluid which contains cholesterol crystals. Rarely one of these cysts ruptures and the crystals appear in the cerebrospinal fluid. Calcification in the wall of the tumor is common and that is, of course, seen on x-ray. Under the microscope the cells may resemble embryonal buccal epithelium. Vascularity of these tumors is very poor; for this reason they often undergo cystic degeneration and calcification. Sometimes they are transformed into teratomas or teratoid tumors. The symptoms vary according to the size of the tumor and age of the patient and depend upon their location, namely, whether they are below or above the diaphragm of the sella. Those tumors which arise below the diaphragm initially are confined within the sella and in these cases symptoms of hypopituitarism appear early. As the tumor expands, it causes upward pressure on the dural roof of the sella, headache appears, the optic chiasm becomes compressed and the various visual defects, which I mentioned earlier, appear. Those tumors which lie initially above the diaphragm are suprasellar from the beginning and involve early the infundibulum, optic chiasm and optic nerves. In these patients, visual defects and headaches appear first, just as were noted in our patient. They may spread over the base of the brain and

occasionally may project posteriorly over the pons or anteriorly over the frontal lobes and produce symptoms characteristic of involvement of these areas of the brain. I came across a report<sup>2</sup> which analyzed 45 cases of craniopharyngioma verified either at operation or at autopsy. Of these 45 cases, 25 were males and 20 females. In 66% of the patients the symptoms arose before 16 years of age, in 22% the symptoms arose after the age of 30 years. The interval between the appearance of symptoms and hospitalization varied; it was longer in those who had endocrine disturbances; in these, 8 years elapsed on the average between the appearance of symptoms and hospitalization; in those who had visual field defects and headaches, this interval was 2 years on the average. Twenty-nine patients, 17 males and 12 females, became ill before adolescence or before 16 years of age. Nine of these patients had adiposogenital dystrophy of the Froelich type; 5 of these patients were dwarfs. Eight other patients were hypophyseal dwarfs of Lorain type; as you know these are symmetrical dwarfs. There were 15 patients who became ill after the age of 16 years; 8 of these had endocrine disorders. The females had amenorrhea, girdle obesity, climacteric complaints and low B.M.R. One patient had diabetes insipidus and hypothyroidism. Of the male patients, 1 had lack of libido, diabetes insipidus and low B.M.R.; 1 patient had marked hypopituitarism, impotence, lack of beard, scanty pubic and axillary hair, and female type escutcheon; his skin was pale yellowish, dry, thin, smooth and finely wrinkled, he had a grating voice, small external genitals and low B.M.R. Two patients had slight signs of hypopituitarism; they were pale obese, had scanty hair on the body, weak beard, weak libido and low B.M.R. Mental and vegetative disorders were found in several. Ten patients had somnolence. One patient had Korsakoff's psychosis, 4 patients had periodic stupor and psychomotor agitation; in 2 the agitation alternated with apathy. Thirty-four patients had headaches, 15 had papilledema. Optic atrophy was present in 29; in 5 it was monocular and in 7 the atrophy was accompanied by papilledema. One patient had hemiparesis with transient hemichorea,



1 had hemiataxia, 1 had transient paralysis of the 6th nerve, 1 had epilepsy and 1 had progressive bilateral exophthalmos without any signs of hyperthyroidism. Visual field defects of various kinds were present in 36 patients. X-rays of the skull showed calcification in 32 patients, or 71%; in 2 of these the calcification was intrasellar, 26 had suprasellar calcifications and 4 patients had both intra and suprasellar calcifications. Three patients (7%) had negative x-rays of the skull; in these, ventriculography showed a suprasellar expansive process located in the median plane. Altogether the sella was abnormal in 39 patients. Of the 6 patients in whom the sella was normal, 3 had suprasellar calcification.

In addition to chromophobe adenoma and craniopharyngioma, other tumors such as gliomas, angiomas and endotheliomas can cause this picture. Now, this man did have hemangiomatic lesions over the trunk, and I wonder whether he had a hemangiomatic lesion in the region of the hypothalamus. I doubt it very much because his disease apparently started at the age of 13, and at the time he was brought to operation, when no tumor was found, he was 20 years of age. It is difficult for me to conceive that a hemangioma would do this unless it grew slowly and gradually. In my search of the medical literature I did not come across a case of hemangioma producing this symptom complex. A metastatic tumor to the region of the hypothalamus or the pituitary can also cause this symptom complex. Granulomas, as for example, the Hand-Schuller-Christian type, or sarcoidosis, could also do this. Some years ago we had a patient with sarcoidosis who had diabetes insipidus. Our patient had no other lesions of sarcoidosis. I think, therefore, we can easily dismiss this possibility. A meningioma may cause a picture of this kind and meningiomas are sometimes slow in growth. I cannot definitely rule out meningioma in this man. Infections, such as tuberculosis, syphilitic gumma, or acute inflammatory lesions such as encephalitis or meningitis involving this area, and of course injury involving the hypothalamus, can also cause the entire picture.

Now returning to the problem "What did our patient have?" My choice narrows down

to the pituitary tumors, namely, chromophobe adenoma and craniopharyngioma, both of which may involve the optic chiasm and hypothalamus. However, diabetes insipidus is said to occur rarely in chromophobe adenoma; it does occur in about 25% of patients who have craniopharyngioma. On the other hand, craniopharyngiomas often occur in the young before puberty, while chromophobe adenomas occur after puberty. This man was 13 years of age, or at about puberty, when his symptoms began. On the basis of age alone we cannot rule out craniopharyngioma, for we saw in that report from Sweden that although many patients were more than 30 years of age, the majority were less than 16 years of age when their symptoms began. So I think that this man had a craniopharyngioma.

*Clinical Diagnosis:* Craniopharyngioma.

#### Pathological Findings

DR. J. M. YOUNG: At the time of autopsy, this was a 38 year old white man who externally showed feminine distribution of hair and fat. Over the scalp there were healed surgical scars. The remainder of the body showed little of note, except for a few hemangiomatic lesions over the face, which were mentioned in the protocol. When the body was opened the pleural spaces showed no excess fluid. The left lung weighed 360 grams and the right 400 grams. Neither showed significant changes when dissected. The heart was quite small, weighing only 200 grams, and there was serous atrophy of the fat of the epicardium. The spleen demonstrated congestive changes and weighed 140 grams. The liver weighed 1850 grams and grossly showed little evidence of cirrhosis. However, microscopically, there was periportal fibrosis and a moderate amount of fatty metamorphosis. The pancreas was normal. The adrenals were quite small with atrophy of the cortex. The kidneys weighed 120 and 140 grams and microscopically showed little of note. The testes revealed extreme atrophy. There was no spermatogenesis present, and there was no significant hyperplasia of the interstitial cells. The thyroid weighed only 8 grams. I would say that the average thyroid weight in the male we

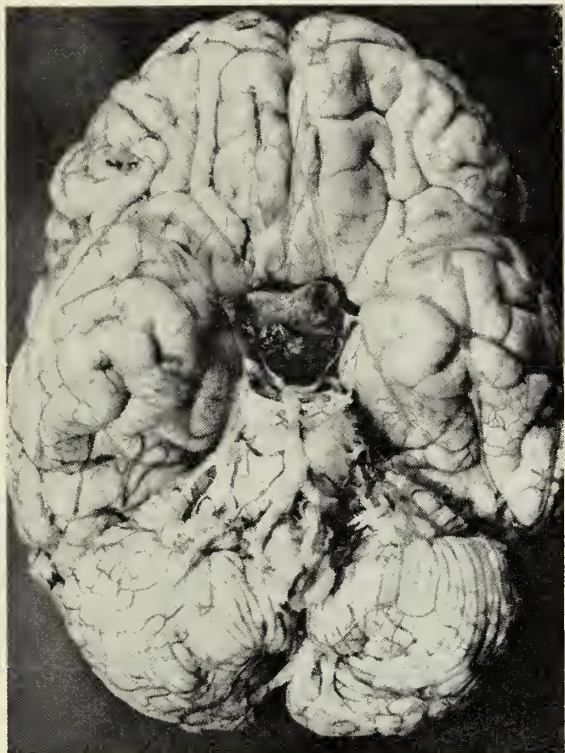


FIG. 4.

see here would be from 20 to 25 grams. Microscopically, there was pronounced atrophy of the thyroid follicles.

The brain when removed weighed 1380 grams. Figure 4 is a gross picture of the base of the brain. In the region of the optic chiasm was a bluish mass projecting from the floor of the third ventricle. It in-

volved the optic chiasm. The full dimensions of this lesion appeared when the brain was sectioned (Fig. 5). A cross section through the region of the optic chiasm demonstrated an almost complete obliteration of the third ventricle by a hemorrhagic mass representing an angioma. It is very interesting that the angiogram did not show any filling of this, and for that reason I think that it belongs in the true angioma group rather than in the arterio-venous anomalies that can occur. Differentiation of these lesions can be very confusing at times. Some people divide these lesions into different categories. The true tumors are usually called the hemangio-endotheliomas or hemangioblastomas, and the others, the so-called hamartomas, are called angiomas which may be either venous or arterial. Then there are, of course, the arteriovenous anomalies. The type of lesion shown by our case is a cavernous hemangioma, much like the type one sees in the liver frequently. This type of angioma, when in the brain, is seen most commonly in the cerebrum. Other locations include the pons, and a very few have been reported in the region of the third ventricle. Occasionally, they will cause hydrocephalus as was true in our case. Figure 6 shows a section through the cerebellum and the brain stem, revealing other angiomas. Some investigators have used the presence of



FIG. 5.

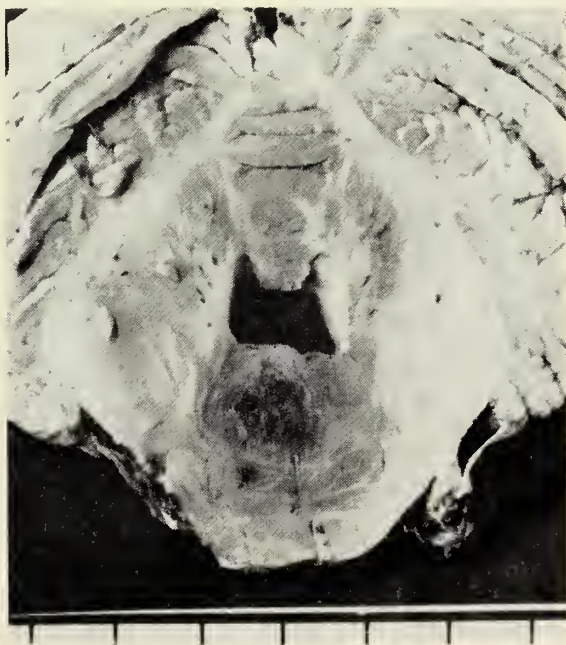


FIG. 6.



brain tissue between the vessels as evidence that the lesion is not a tumor; in other words, it is just a malformation of a blood vessel. Others argue that this is not necessarily a way to distinguish between a true tumor and a pseudo-tumor or an anomaly of a blood vessel of the brain. The pituitary was quite small and encased in scar. It measured about 0.5 cm. in its greatest diameter. It was intact; however, there was atrophy of the cells. This case

then does represent a panhypopituitarism on the basis of a most unusual hemangiomatic lesion of the third ventricle.

*Final Anatomic Diagnosis:* Angioma, region of third ventricle with panhypopituitarism.

#### References

1. Baker, A. B.: Clinical Neurology. Paul B. Hoeberb, Inc. 1955, p. 1176.
2. Muller, R. and Wohlfart, G.: Craniopharyngiomas, Acta med. scandinav. 138:121, 1950.

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### HISTORIAL

It was about the time of General LaFayette's visit to Nashville that the first Legislative Act related to psychiatry was passed. This was in 1832 when an appropriation of \$10,000 was made for the building of a lunatic asylum.

Two distinguished physicians of the day were greatly interested in this "humanitarian" act. They were Dr. Felix Robertson, the youngest son of James Robertson, the founder of Nashville, and Dr. Boyd McNairy, who later became a superintendent of the hospital.

Dr. Robertson was the first white child born in Nashville and received his M.D. degree from the University of Pennsylvania in 1806. It is interesting that his thesis was entitled "Chorea Santi Viti" in which he described a peculiar nervous frenzy, which under religious and other forms of excitement attacked a large number of persons on the frontier in the early years of the 19th century.

This first mental hospital in Tennessee did not open until 1840 when two "pauper lunatics" from Lincoln County were admitted. The State asked the sum of \$2.50 per week for each patient.

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# President's Page



WILLIAM J. SHERIDAN,  
M.D.

Attendance at the AMA's first National Conference on Mental Illness and Mental Health held recently in Chicago brought into sharp focus the important role of the individual physician in this immense problem. The diverse ramifications of a problem of this magnitude involves many fields of endeavor—humanitarian, educational, socio-economic, financial and legislative as well as medical. As such it represents an overall community social problem despite the fact that it is basically an illness. The features of illness and health are the responsibility of our profession, but there are conceivably many other facets which represent national and community responsibilities outside the strictly medical category. Therefore, we have responsibilities both as doctors and as lay citizens.

According to the AMA's statement, "Mental illness is America's most pressing and complex health problem." Much emphasis is placed on the role of the individual physician at community level both as regards prevention and early treatment of manifestations of this disease. The immensity of the task is at present regarded to be too great to be relegated to the relatively few who have had especial formal training as specialists in treatment of mental illness. It is recommended that more appropriate training be given to students in medical schools and also during internship and residency; that adequate postgraduate programs be made available and popularized.

When one deliberates concerning his contact with patients in his every day practice, be he general practitioner or an ultra-limited specialist, the realization that consciously or subconsciously we deal with some element of psychic factors in each and every one of our patients. Such awareness should serve to expand and redouble our emphasis to keep our patients on an even psychic keel. If we feel that we ourselves need further personal education it is available. Individual professional efforts to ameliorate psychic disturbances in their early phases may possibly so reduce the patient load at local level that those patients with advance conditions which require specialized treatment may be better able to gain earlier admission to designated appropriate treatment centers.

Emphasis is placed on developing care at community level rather than routine segregation of patients in institutions removed from their own localities. Such a plan requires an over-all effort of the various involved medical and social services for prevention, treatment and rehabilitation as required. Such community joint participation and coordination in a mental health program requires medical leadership which is incumbent upon our profession to make available. Active participation of our members in these local programs is respectfully requested.

*William J. Sheridan, M.D.*

President



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NOVEMBER, 1962

## EDITORIAL

### DIAGNOSIS AND MANAGEMENT OF GONORRHEA

The incidence of gonorrhea in the United States is estimated to be more than 1.5 million cases per year but only one-sixth of these are reported to public health authorities.<sup>1</sup> The number of reported cases of gonorrhea in Tennessee has decreased from 13,142 in 1956 to 9,585 in 1961. Here also it is believed that only one out of every six cases is reported to the authorities.<sup>2</sup> The economic loss and mental and physical suffering produced by this infection cannot be estimated. For example, the total extent and cost of the complications of gonorrhea in the female is impossible to determine.

The diagnosis of acute gonococcal urethritis in the male presents little practical difficulty. The presence of typical gram-negative intracellular diplococci in a stained smear of purulent exudate is sufficient for

most purposes. However, in the female patient, examination of the gram-stained smears is generally of little value. Cultural technics are essential for the proper identification of the gonococcus in the female. Even the best cultural methods may fail to detect the gonococcus. In some studies, culture failure rates have been between 25 and 50% in suspected females. This high failure rate may be due to one of the following: (1) lack of proper preparation and care of specimen; (2) environmental factors, such as temperature, moisture, etc.; (3) sampling factors, such as too few or no organisms collected in a given specimen; (4) presence of gonococidal agents; (5) host factors, such as phase of menstrual cycle and pH of the mucosa; and (6) laboratory factors, such as inadequately trained personnel and poor equipment.

Culture technics must be thorough and time consuming. Sugar fermentation and other physiologic tests are necessary for proper identification, even with those bacteria giving a positive oxidase reaction. These technics are not practical for most clinics nor readily available in clinical laboratories. A new approach by Deacon and associates<sup>3</sup> has much promise. They have demonstrated a specific K-type antigen of the gonococcus. By use of a conjugate of fluorescein isothiocyanate and globulin fractions of gonococcal K-antigen immune serum, gonococci can be detected by ultra-violet microscopy. The advent of fluorescent antibody technics for the identification of *Neisseria gonorrhoeae* in direct smear or smears from early cultures provides more effective laboratory aids for the diagnosis of gonorrhea than have been available in the past year.

The fluorescent antibody technic suggests that the apparently asymptomatic female is a problem in the epidemiology of gonorrhea.<sup>4-6</sup> Using this test positive results may be expected in 30 to 60% of women thought to be infected. Evaluation of cure following therapy has been inaccurate because the data available have been inadequate. Present studies of gonorrhea in females using fluorescent methods for diagnosis suggest that most current schedules of penicillin and other antibiotic therapy give failure rates of 25 to 50 percent.

Thayer and others<sup>7</sup> have shown that gonococci phagocytosed in tissue culture cells survive many times the extracellular inhibitory concentration of penicillin, chloramphenicol, erythromycin and novobiocin. This suggests that the duration of therapy should be sufficient to permit the gonococci to become extracellular.

Decreasing susceptibility of the gonococcus to penicillin has been suggested recently by a number of workers. For this reason higher dosages of penicillin should be given and the Venereal Disease Branch of the Public Health Service has recommended a minimal dosage of 1.2 to 2.4 million units for treatment of both men and women with uncomplicated gonorrhea. The penicillin used should produce adequate blood levels for at least 48 hours. If complications, such as endocarditis and arthritis are present, large dosages (2.4 to 20 million units) of aqueous penicillin should be administered daily until signs and symptoms have subsided for 24 hours. When male patients do not respond to treatment with penicillin, satisfactory results have been observed with the oral administration of buffered tetracycline phosphate complex.

In those who are either nonresponsive to penicillin or who show allergy and sensitivity to penicillin, other antibiotics such as tetracycline, triacetyloleandomycin and erythromycin may be employed. These drugs are given in 2 to 3 gram doses per day and should be continued for a minimum of four days to prevent the development of resistance and lessen the likelihood of sensitization to the antibiotic.

No injectable substitute for penicillin has proven to be completely satisfactory in the treatment of gonorrhea. The tetracyclines are painful, require repeated injections for adequate dosage and are expensive. Chloramphenicol and streptomycin are the only drugs that are practicable when administered intramuscularly. However, because of their toxicity and the possible development of resistant strains, these drugs must be used with caution.

A summary of our newer knowledge includes the following: (1) until the fluorescent antibody technic is used extensively, especially in the female, the diagnosis and evaluation of cure rates will be inadequate;

(2) decreasing susceptibility of the gonococcus to penicillin and other antibiotics must be considered in outlining therapy; and (3) treatment schedules as now constituted make it necessary to give large doses of the antibiotic for a minimum of four days.

A. B. S.

#### References

1. Simpson, W. G. and Brown, W. J.: Current Status of the Diagnosis and Management of Gonorrhea, *J.A.M.A.* 182:63, 1962.
2. Tucker, C. B.: Personal communication.
3. Deacon, W. E., et al.: Identification of *Neisseria Gonorrhoeae* by Means of Fluorescent Antibodies, *Proc. Soc. Exper. Biol. & Med.* 101:332, 1959.
4. Deacon, W. E., et al.: Fluorescent Antibody Tests for Detection of *Gonococcus* in Women, *Public Health Rep.* 75:125, 1960.
5. Brown, L., Copeloff, M. B., and Peacock, W. L., Jr.: Study of Gonorrhea in Treated and Untreated Asymptomatic Females as Determined by Fluorescent Antibody and Culture Methods: II. Teenage and Early Adults Confined. (To be published.)
6. Harris, A., et al.: Fluorescent Antibody Method of Detecting Gonorrhea in Asymptomatic Females, *Public Health Rep.* 76:93, 1961.
7. Thayer, J. D., et al.: Failure of Penicillin, Chloramphenicol, Erythromycin, and Novobiocin to Kill Phagocytized *Gonococci* in Tissue, *Antibiot. Ann.* pp. 513, 1956-1957.



#### CONFERENCE FOR OFFICERS OF COUNTY MEDICAL SOCIETIES

On the Public Service page you will find the announcement and program of the Conference for County Officers and Committee Chairmen to be held on February 3. Among the speakers will be Dr. Edward R. Annis, President-Elect, and Dr. Milford Rouse, Vice-Speaker of the House of Delegates of the American Medical Association. These two names alone assure a Conference worthy of the attention of the officers of county societies and the Tennessee State Medical Association.

In the "good old days"—speaking of the time when doctors needed to pay little if any attention to politics, to social legislation or to economics—medical organizations existed essentially only for the dissemination of medical and scientific knowledge which would make its members better doctors. Then the county medical societies were quite



self-sufficient. After their representatives to the House of Delegates had been elected and certified, and after the annual dues had been collected and forwarded to the Office of the State Association, little communication was needed between them and the parent organization. The county societies planned their own scientific programs and activities. Public relations were firmly based on physician-patient relationships. Few newspapers would have had the temerity to disturb the mutual respect between doctors and the people. Nor were there third parties to muddy the waters of medical care. The State Association likewise had little to disturb it—the transaction of some business in the House of Delegates, some internal “politics,” loose relationships with the American Medical Association and the annual scientific sessions—and after that drowsing until the next annual meeting time approached.

Some fifteen years ago came a rude awakening and life for the profession has never been the same since then. Whether for better or for worse, social consciousness which had been growing slowly but steadily made itself felt. On its heels, and rapidly overtaking it, came social legislation. As the demands for “more and better” by the “have-nots” became noisier and more pressing, political issues were found readymade and at every hand. The tax dollar became fair game! Though industry and business had felt and had to compromise with social demands for some decades, the medical profession began to feel the pressures when welfare legislation became established.

Those who proposed and voted the Jugernaut of social legislation did so with a minimum of advice and understanding of what they did and continue to do. Suddenly the medical profession found itself, and most unwillingly, on the defensive. With it came the end to merely the enjoyment of the practice of medicine and keeping up with what was new medically. Unwillingly medical organizations had to take attitudes other than the aims of professional competence and the provision of medical care for our people. Medicine now was forced to oppose, or to attempt to influence or direct legislation and other matters of public policy both for its own survival, independence, and self-

respect, and especially for the protection of the public itself, even though it had a selfish but myopic viewpoint.

The challenges had to be met upon such a broad front that this was possible only through unity for strength. Communication between the A.M.A. and the state associations became essential and was developed to a high degree, showing itself in recent months and years as a strong barricade against frontal attack. But the most effective bulwark cannot be built until the individual physician has identified himself through his county society with the state association.

Here is the purpose of the Conference for officers of county medical societies. If they will but come and listen, they will learn much of what faces the medical profession today and in the future, not only on the political scene, but in its role of implementing social legislation, for willy-nilly such legislation as it touches medicine is predicated upon implementation by the private practitioner of medicine. If the county officers do not attend and if, after attending, they do not imbue the members of their groups with a sense of responsibility to learn and to know and to act when good medical care is threatened by politicians and others, they will lose the right to complain and criticize when the changes of time go against them.

The officers of the State Association hope and expect that those chosen to represent the doctors of the state will see their responsibility and learn from the Conference how they can be of help in what threatens good medical care.

R. H. K.



### Special Item

*Since the Keogh type legislation, H.R. 10, (Self-Employed Individuals Tax Retirement Act) has been passed by the Congress and has become law, the following analysis has been made by the American Medical Association. The analysis should be of interest to all TSMA members and all doctors generally.*

#### "The Self-Employed Individuals Tax Retirement Act" (H.R. 10)

The "Self-Employed Individuals Tax Re-

irement Act" provides tax benefits to those self-employed individuals and partners who set aside some of their earned income into formal retirement plans. Up to 10% of earned income or \$2,500, whichever is less, can be contributed each year to a specified retirement plan. Half of this amount will be allowed as a tax deduction. A physician who contributes \$2,500 to this plan will be able to deduct \$1,250. All realized earnings within the plan are permitted to accumulate tax free.

*This is how the new law will benefit the self-employed:*

Compare the situation of a sole practitioner (without employees) before and after the new law. Assume he's in a 50% tax bracket and is able to put away \$2,500 a year towards his retirement. A married taxpayer with a taxable income of \$32,000 is in the 50% tax bracket. Under the new law, by putting away the same \$2,500, he ends up with an additional \$625 of after-tax cash (half of the \$2,500 is deductible and in the 50% tax bracket that saves him \$625 in cash). So, if nothing else, he can put away an additional \$625 each year toward retirement.

Assume the money is invested at 4%. After 25 years, \$2,500 accumulating at the full 4% (there is no income tax on the earnings) will come to \$108,280. Before the new law, the same \$2,500 a year accumulating at 4% would come to a total of some \$81,700. Also, under the new law the additional \$625 a year that is available can accumulate to an additional \$20,420 (even after taxes are paid each year).

On the payout from the fund, however, there is a tax to be paid. Assume for purposes of illustration that his other income in the year of payout will equal all his deductions so that his payout from the retirement fund will be subject to the lowest possible tax. The tax will be figured this way: The \$108,280 accumulated would first be reduced by the twenty-five \$1,250 annual contributions which were not deductible (only half of each \$2,500 contribution was deductible). That cuts down the taxable portion to \$77,030. The tax on 1/5 of that is first figured. On a joint return that is \$3,742. This figure is then multiplied by five, giving a total tax of \$18,710. There-

fore, of the \$108,280 accumulation, the physician will keep \$89,570. Add to that the \$20,420 (after taxes) he has accumulated outside the plan by investing the annual \$625 tax savings. The total comes to \$109,990. That is \$28,290 more than he would have accumulated after taxes without the tax benefit of the new law.

It should be emphasized, however, that the illustration is based upon the assumption that his other income in the year of payout will equal all his deductions. If this is not the case, the tax benefit will be less depending upon his tax bracket. Also, it may be that for the physician without other significant income there may be an advantage to take his payout over a number of years in the form of an annuity.

In general, the new law will be most valuable to the self-employed with no employees, as in our example above. The more employees and the higher their compensation, the smaller the advantage to be gained from the new retirement system. For example, assume a physician pays out \$14,000 a year in salaries and realizes \$25,000 for himself. He sets aside the maximum 10% for his retirement, and contributes the same percentage, or \$1,400, to a pension plan for his employees. After allowing for the tax savings—counting deductions for what he contributes for himself and employees—he is out of pocket \$2,995 a year. That is \$495 more than he has set aside for his own retirement. Based upon the present yield of tax-exempt municipal bonds, he might be better off to avoid the mechanism of the new law and set up a retirement fund with tax-exempt bonds. Reinvesting the tax-exempt income in the more tax-exempt bonds can also produce a good retirement fund without fulfilling the technical requirements of a law that provides for tax penalties if you revise your estate planning or if your financial needs change.

Eligibility to draw on retirement funds begin at age 59½—insurance age 60. It is mandatory by age 70½. These ages apply without regard to whether the self-employed person has actually retired.

If an individual with a retirement fund starts drawing on it before he reaches age 59½, he will be required to pay a penalty tax. If he dies, the fund will be paid to his



beneficiaries under one of the various methods set up in the law. As shown in our illustration above, if he draws his money in a lump sum after age 59½, he must pay regular taxes, but on an averaging formula applied as if the fund had been drawn over a period of five years.

*How contributions may be invested:* The amounts put into a retirement plan under the new law may be invested in any of the following ways:

(1) *Trusted Plan:* The contributions to the plan are turned over to a bank as trustee. The trustee can then invest them in stocks, bonds, mutual funds, annuities, life insurance contracts, other investments. Investment decisions can be controlled by the self-employed person setting up the plan.

(2) *Insurance and Annuity Plans:* In addition to the trusted plan, one of the following is available:

(a) *Trusted insurance plan where someone other than a bank is trustee:* Here the trust investments must be limited to an annuity, endowment or life insurance and the life insurance company must supply whatever information about the trust the Treasury Regulations will require.

(b) *Custodian account:* No trust is required. Contributions are turned over to a special bank custodial account and invested solely in endowment, annuity or life insurance.

(c) *Direct purchases:* No trust is required where annuities (including variable annuities) or face amount certificates are purchased.

(3) *Special Mutual Fund Plan:* Custodian bank account (same as (2) (b) above, if the contributions are invested exclusively in stock of a mutual fund or other regulated investment company which issues only redeemable stock).

(4) *U.S. Bond Purchases:* Contributions can be used to purchase directly a special new issue of U. S. Bonds (interest rate not yet determined) which would pay out principal and accumulated interest when cashed in at retirement.

## PROGRAMS AND NEWS OF MEDICAL SOCIETIES

### Roane-Anderson County Medical Society

In conjunction with the Dwight Clark Memorial Lecture, conducted on October 29th, the Society met on October 30th for a dinner at the Holiday Inn. The meeting was attended by physicians, their wives and guests.

Dr. Walter S. Palmer, Emeritus Professor

of Medicine at the University of Chicago, was the speaker and his subject was "Cancer of the Gastrointestinal Tract."

### Cocke County Medical Society

"The Treatment of Common Eye Problems" was the topic of Dr. Dale Teague, Knoxville, when he addressed the monthly meeting of the Cocke County Medical Society on September 24th at the County Health Office in Newport.

### Knoxville Academy of Medicine

The Society conducted its regular monthly meeting on October 9th at the Academy Building. Dr. L. D. Zeidberg, Professor of Epidemiology at Vanderbilt University, Nashville, spoke on the increased menace of air pollution. Dr. Zeidberg is Director of Tuberculosis Research for the Tennessee Department of Public Health and he is also the Director of the Nashville Air Pollution Study.

### Chattanooga-Hamilton County Medical Society

The Society's regular monthly meeting was conducted in the auditorium of the Interstate Building and the scientific program consisted of the following: "Gastrectomy—Recent Trends" by Dr. Frank B. Graham, and "Acute Thyroiditis" by Dr. Nat T. Swann, Jr. An interesting case report was presented by Dr. John J. Killeffer.

## NATIONAL NEWS

### The Month in Washington (From the Washington Office, AMA)

Influenced strongly by the thalidomide incident, Congress approved legislation giving the Food and Drug Administration more control over the prescription drug industry.

The Kennedy Administration and Sen. Estes Kefauver (D., Tenn.), chief sponsor of ethical drug legislation, successfully exploited the thalidomide incident after prospects of passage of a strong drug bill waned.

However, they were unable to get all they wanted in the legislation even with the impact on Congress of the widespread publicity about the clinical testing of thalidomide in this country coupled with re-

ports from Europe of births of malformed children by women who had taken the drug during pregnancy.

One Administration proposal rejected by Congress would have given the Secretary of Health, Education and Welfare authority to require physicians to report directly to him on their clinical tests with new drugs.

The new law empowers the FDA to require "substantial evidence" of the efficacy as well as safety, of new drugs before licensing them for marketing. The AMA had warned Congress that this might lead to a test of relative efficacy which could result in potentially-helpful drugs being barred from sale. The AMA contended that the old FDA requirement that a drug live up to its label claims was a sufficient test of effectiveness.

The Pharmaceutical Manufacturers Association also warned that drug research might slow down as a result of the new law.

"Some provisions of the new law may not be helpful to the public," the PMA said. "In fact, unless there is the wisest administration of the law, harm can be done. For example, medical research may slow down and the costs of medications may increase."

Physicians will be required to get the consent of the patient, or a close relative, for treatment with the experimental drugs except in instances where the physician feels that it would not be feasible or would be contrary to his professional judgment. Consent already is a part of the code of ethics of the American Medical Association.

Some other major provisions of the new law:—

—Authorize the FDA to swiftly suspend any drug which it suspects is dangerous.

—Require that the generic name of a drug be printed on the label in type half as large as that for the trade name.

—Extends the time during which FDA may review a new drug application before it must be approved or disapproved.

—Authorizes the HEW Secretary to establish generic names for new drugs.

—Authorizes the HEW Secretary to prevent testing of drugs on humans if he determines there has not been sufficient pre-clinical testing.

—Require batch certification of all antibiotics.

Congress passed a bill authorizing a \$36 million three-year program for federal aid for intensive vaccination programs against polio, diphtheria, whooping cough and tetanus.

The vaccination campaigns are to be aimed primarily at children less than five years old. The U. S. Surgeon General was given broad authority in deciding the amount and terms of federal grants under the program.

Grants will be made to states or, when approved by state officials, to cities or other local governmental units.

Also on the immunization front, a special Advisory Committee twice recommended to the Public Health Service that Type III oral polio vaccinations be continued for pre-school and school age children but not for adults for the time being.

The Public Health Service accepted the recommendation and urged that communities proceed with planned mass vaccination campaigns using Type III for children. But some communities decided to hold up their mass immunization programs at least temporarily or to suspend Type III doses for children, as well as adults.

The Advisory Committee first made its oral polio vaccine recommendation at an emergency meeting on September 15. The meeting was called after Canada suspended use of oral polio vaccine. The Health Ministry action in Canada, where all three types of the oral vaccine had been given in one dose, was prompted by the occurrence of a few cases of Type III polio. The three types of vaccine are given in separate doses in this country.

There also were at that time a few Type III cases reported in this country among adults who had taken the oral vaccine.

After an Oct. 2 meeting, Dr. Luther L. Terry, Surgeon General of the PHS, said: "The recommendation that Type III be confined to children has raised the question of spread from vaccinated children to adults, especially family members. The evidence does not indicate a hazard to adults exposed in this way."

"The level of this risk can only be approximated but clearly is within range of less than one case per million doses. Since the (Type III) cases have been concentrated



among adults the risk to this group is greater whereas the risk to children is exceedingly slight or practically nonexistent."

★

President Kennedy permitted H.R. 10, a bill giving physicians and other self-employed persons the privilege of a federal income tax deduction for private retirement plans, to become law without his signature.

He let midnight, Oct. 10, go by without acting on the measure and it became law automatically.

Enactment of the legislation into law climaxed a 12-year battle in Congress. The House passed it twice, in 1958 and 1959, but it died each time in the Senate with adjournment.

This year the House passed it with a 361-0 vote. The Senate vote was 70 to 8.

The new law authorizes a self-employed individual, such as a physician, to contribute up to 10% of his earned income or \$2,500, whichever is less, toward a retirement plan, provided he includes all of his employees with three or more years of service under the plan. A tax deduction of half of the contribution to the self-employed person's retirement plan would be allowed.

The contributions made on behalf of employees would be fully tax deductible. The measure prohibits drawing on the retirement funds without penalty before age 59½ except in case of disability or death.

## MEDICAL NEWS IN TENNESSEE

### Tennessee Valley Medical Assembly Breaks Attendance Records

The Tennessee Valley Medical Assembly broke all records for attendance over a ten-year period with the conclusion of the 1962 meeting. There was an over-all attendance of 1,591. This was broken down as 731 physicians and surgeons, 400 nurses, 252 wives of doctors and 187 exhibitors.

The Assembly featured noted national and international medical specialists.

### Regional Conference on Aging

Tennessee's program on aging was called positive and "second to none in the United States." The statement was made by Dr.

Thomas F. Frist, Chairman of the Governor's State Committee on Aging.

The Governor's Committee sponsored the regional conference on aging in cooperation with the Tennessee Council and the regional sub-committee. More than 200 persons attended at the War Memorial Auditorium in Nashville. Five workshops were held on various phases of aging-employment, senior citizens, church programs, housing and nursing homes.

Representatives from 30 Middle Tennessee counties attended. The theme of the conference was "A Positive Program for the Aging in Tennessee."

### Symposium on Radioisotope Scanning

Scientists from the United States and foreign countries gathered in Oak Ridge on October 22-24 for a symposium on clinical radioisotopes scanning. Approximately 200 scientists attended. The program was sponsored by the Medical Division of the Oak Ridge Institute of Nuclear Studies with the assistance of staff members of the Oak Ridge National Laboratory. The symposium brought together physicians and para-medical personnel with radioisotope experience. Formal presentations and workshops were included in the program.

### Tennessee Valley Industrial Health Conference

Members of four statewide groups concerned with occupational health and industrial medicine attended the Tennessee Valley Industrial Health Conference in Gatlinburg, October 12-13.

The conference was sponsored by the Oak Ridge National Laboratory and arranged by the Tennessee Valley Section of the American Industrial Hygiene Association. Physicians and nurses interested in occupational health attended.

### Tennessee Public Health Association

Some 800 public health workers, physicians and others attended the 23rd annual meeting of the Tennessee Public Health Association which began on October 3rd in Nashville. The theme of the conference was "The Individual Citizen's Responsibility in Public Health of the Future."

Among the speakers were: Governor Bu-

ford Ellington, Dr. R. H. Hutcheson, Commissioner of Health of Tennessee, and Dr. Franklin Yoder, Illinois Director of Public Health. Noted public health officials from the Southeast and Southwest United States attended and participated in the program.

The annual meeting of the Association is designed to keep local health department personnel abreast of modern trends in public health and to coordinate public health activities throughout the state.

### University of Tennessee College of Medicine

Beginning in September, 1963, the College will go on a semester basis. It has operated on the quarter system for 33 years. The change is part of an over-all plan to further improve quality of medical education. Officials stated that the two classes of 100 students each will be admitted yearly in September and March. Under the present system, four classes of 50 students are admitted.

★

Dr. Alvin J. Cummins, associate professor of medicine, has been awarded a \$5,300 research grant by the Tennessee Heart Association. Dr. Cummins and Dr. Julio Goldenberg, instructor in medicine, will study circulation in the intestine of experimental animals.

★

Dr. Frederic C. Chang, professor of pharmacology, has been awarded a grant of \$35,202 for a three-year study on plants.

★

Preliminary enrollment figures at the University of Tennessee Medical Units in Memphis show 1,518 registered, including 260 new students.

★

Dr. Guy T. Barry, professor of research and of bacteriology, has received a grant of more than \$132,000 from the U. S. Public Health Service. The grant is a continuation of a previous grant in 1958 covering a five-year study. The purpose of the study is to investigate the chemical composition and metabolism of various strains of *escherichia coli*.

★

The College will expand its program in physical medicine and rehabilitation un-

der a new grant from the Department of Health, Education and Welfare. Dr. L. D. Amick, chairman of the Section of Physical Medicine and Rehabilitation has announced the \$26,800 award by the Office of Vocational Rehabilitation. This will enable the college to initiate a program of teaching, research and service in physical medicine and rehabilitation.

### Tennessee Department of Public Health

The recent death of Dr. R. S. Gass represents a great loss not only to the Division of Tuberculosis Control, of which he served as Director since 1927, but also to the Department of Public Health, and to the State of Tennessee. The excellence of his work in the field of tuberculosis control is attested to by the recognition he received as a pioneer and a leader in this field, and by the honors and awards conferred upon him. After coming to Tennessee as Director of the Division of Tuberculosis Control, he organized and directed the Williamson County Tuberculosis Research Study sponsored by the State Health Department and the Rockefeller Foundation. This work has received international recognition in its contribution to information regarding the factors responsible for the development of clinical tuberculosis and the determination of a sound tuberculosis control program. During the time that Dr. Gass served with the Department of Public Health, four state-owned hospitals have been provided for the treatment of tuberculosis patients in Tennessee; both the tuberculosis death rates and case rates have been markedly reduced; and the control of the spread of tuberculosis, a most significant public health problem, is now a foreseeable goal. Dr. Gass' dedication to the eradication and treatment of this disease is largely responsible for the progress which has been made in Tennessee.

### RESOLUTION

WHEREAS, Since the last meeting of the Board of Trustees, State Tuberculosis Hospitals, we have lost by death a loyal member of this Board, Dr. R. S. Gass, Director of the Division of Tuberculosis Control, and

WHEREAS, Dr. Gass contributed much to tuberculosis control in Tennessee, and

WHEREAS, This Board of Trustees, State Tuberculosis Hospitals, has sustained a great loss in the passing of Dr. Gass,



THEREFORE BE IT RESOLVED, That the Board of Trustees, State Tuberculosis Hospitals, express its sorrow for the loss of a co-worker and friend.

BE IT FURTHER RESOLVED, That a copy of this resolution be spread on the minutes of this Board and that a copy be sent to the family of the deceased.

Roy W. Epperson, M.D., Chairman  
Robert Turner, Vice-Chairman  
R. H. Hutcheson, M.D., Secretary

## PERSONAL NEWS

**Dr. Glenn E. Horton**, Memphis, presented papers before the 1962 meeting of the American College of Chest Physicians in Chicago. His subject was entitled "Inhalant Respiratory Allergies: Its Often Overlooked Role in Chronic Bronchopulmonary Syndromes." Dr. Horton also presented papers at the 111th Annual Meeting of the American Medical Association in Chicago.

Newly elected officers of the East Tennessee Radiological Society are: **Dr. Clifford L. Walton**, Knoxville, President; **Dr. Walter E. Scribner**, Kingsport, vice president; **Dr. Thomas S. Long**, Chattanooga, President-Elect; and **Dr. J. Marsh Frere, Jr.**, Knoxville, Secretary-Treasurer.

Officers elected at the annual meeting of the Tennessee Public Health Association included **Dr. C. P. McCammon**, secretary-treasurer, and **Dr. C. B. Tucker**, Nashville, president-elect. Dr. Tucker will assume the presidency in October, 1963.

**Dr. Brad Mutchler**, Lafayette, has located his offices in the Smith-Chitwood Hospital.

**Dr. Lewis T. Howard**, Harriman, has returned to his practice following a residency at the University of Tennessee Hospital in Knoxville.

**Dr. John H. Burkhart**, Knoxville, recently addressed the annual meeting of the Knox County Unit of the American Cancer Society.

Two Harriman physicians, **Dr. Julian Ahler** and **Dr. Lewis T. Howard**, plan to re-open the clinic in Wartburg.

**Dr. Robert N. Alexander, Jr.** recently addressed Area 8 of the Licensed Practical Nurses Association.

**Dr. Fred Looper**, formerly of Livingston, has opened his office for the practice of medicine in Lexington with **Dr. Maurice Lowry** and **Dr. Jack Stripling**.

**Dr. William Andrews**, Memphis, was a recent guest speaker at the Collierville Rotary Club.

**Dr. Howard W. Thomas** has opened his office for the practice of medicine in Saltillo.

**Dr. W. Powell Hutcherson**, Chattanooga, recently participated in a meeting of the American College of Obstetricians and Gynecologists in Little Rock.

**Dr. Joe Carl May** and **Drs. Joyce** and **Floyd May** have opened their offices in Elizabethton.

**Dr. Ralph Gambrel** is now associated with **Dr. Walter L. Goforth** in the practice of medicine at Rogersville.

Memphis surgeons taking part in the program of the American College of Surgeons meeting in Atlantic City recently were: **Dr. Harwell Wilson**, **Dr. James Pate**, **Dr. R. E. Semmes**, **Dr. Harold B. Boyd**, **Dr. Lewis Anderson**, **Dr. Ralph R. Braund**, and **Dr. Robert McBurney**.

**Dr. William N. Cook**, Columbia, has been elected Middle Tennessee Vice President of the Tennessee Public Health Association.

**Dr. R. Graham Fish**, Paris, has been elected to a two year term as a member of the Board of Directors of the American Cancer Society, Tennessee Division.

**Dr. J. T. Layne**, Copperhill, has been elected president of the Kiwanis Club.

**Dr. B. F. Byrd, Jr.**, Nashville, has assumed the presidency of the Tennessee Division of the American Cancer Society. **Dr. Cleo Miller**, Nashville, was elected vice president. Awards of recognition for 25 years of service to the Cancer Society went to **Dr. Howard King**, Nashville; **Dr. H. S. Shoulders**, Nashville; **Dr. S. S. Marchbanks**, Chattanooga; **Dr. Ralph H. Monger**, Knoxville; and **Dr. Wm. J. Sheridan**, Chattanooga.

**Dr. William J. Sheridan**, Chattanooga, addressed the 15th Annual Convention of the Tennessee Nursing Home Association in Memphis.

**Dr. Robert R. Bigelow**, Oak Ridge, has been elected president of the Knoxville Surgical Society. **Dr. C. B. Lequire**, Maryville, was elected vice president, and **Dr. George Inge**, Knoxville, was named secretary-treasurer.

## ANNOUNCEMENTS

### Physicians Recently Licensed in Tennessee

Joe L. Wilhite, Parsons  
Joe E. Parrish, Knoxville  
James E. Collins, Gainesville, Fla.  
James K. Cooper, Lexington, Ky.  
John D. Pike, Iowa City, Iowa  
Joseph T. Saiter, Louisville, Ky.  
Courtney C. Whitlock, Jr., Indianapolis, Ind.  
James R. Appleton, Jr., Memphis  
Edgar D. Baker, Houston, Texas  
James E. Edwards, Memphis  
Robert S. Moore, Knoxville  
David H. Holloway, Jr., Durham, N. C.  
William R. Fowler, El Paso, Texas  
Wm. A. Altemeier, III, Nashville  
Charles L. Cooper, Tallahassee, Fla.  
Lewis W. Hill, New Orleans, La.  
James E. Russell, Nashville  
Gerald E. Sullivan, Lexington, Ky.  
Morton Slutzky, Chattanooga  
James D. Ashmore, Memphis  
Gordon S. Ballou, Knoxville  
Wm. B. Mill, Jr., St. Louis, Mo.  
Charles D. Roberson, Ann Arbor, Mich.

## American College of Allergists

American College of Allergists Graduate Instructional Course and Nineteenth Annual Congress, March 24-29, 1963, Americana of New York, New York City. For further information, write to: John D. Gillaspie, M.D., Treasurer, 2141 14th Street, Boulder, Colorado.

## Postgraduate Assembly in San Antonio

The 27th annual session of the International Medical Assembly of Southwest Texas will be held in San Antonio, Texas, January 28-30, 1963, at the Granada Hotel. The speakers will be:

Internal Medicine—Ralph Jones, Jr., M.D., Miami, Florida

Internal Medicine—D. M. Whitelaw, M.D., Toronto, Canada

Neurological Surgery—Bronson S. Ray, M.D., New York, New York

Ophthalmology—Frank B. Walsh, M.D., Baltimore, Maryland

Orthopaedic Surgery—Harry D. Morris, M.D., New Orleans, Louisiana

Otolaryngology—Paul A. Campbell, Col., USAF, MC, Brooks Air Force Base, Texas

Pathology—Robert C. Horn, Jr., M.D., Detroit, Michigan

Radiology—Hymer L. Friedell, M.D., Cleveland, Ohio

Radiology—Juan Angel del Regato, M.D., Colorado Springs, Colorado

Surgery—Lucius D. Hill, III, M.D., Seattle, Washington

Surgery—Alton Ochsner, M.D., New Orleans, Louisiana

Surgery—George T. Pack, M.D., New York, New York

Surgery—Fred J. Ansfield, M.D., Madison, Wisconsin

## Calendar of Meetings—1962

### State

November 15—Middle Tennessee Medical Association—Lawrenceburg

December 6-7—Middle Tennessee Heart Association—Nashville

December 13—Postgraduate Day—"Practical Gynecology and Endocrinology"—Vanderbilt University School of Medicine, Nashville

### Regional

November 12-15—Southern Medical Association—Miami Beach, Florida

November 13-15—Postgraduate Course: "Orthopedics in General Practice"—Augusta, Georgia

November 14—Medical Society of the District of Columbia—Washington, D. C.

November 15-17—Southern Thoracic Surgical Association—Jamaica

November 15-17—Southeastern States Cancer Seminar—West Palm Beach, Florida

December 4-6—Southern Surgical Association—Boca Raton, Florida

December 4-6—Postgraduate Course: "Growth and Development—Management of Common Behavior Disturbance"—Augusta, Georgia

December 13—Symposium of the Diabetes Association of the District of Columbia, Washington

### National

November 25-28—American Medical Association Clinical Meeting—Los Angeles, California

November 25-30—Radiological Society of North America, Inc.—Chicago

November 25—National Conference on the Medical Aspects of Sports—Los Angeles, California

December 1-6—American Academy of Dermatology, Inc.—Chicago, Illinois

December 6-7—Conference on Graduate Medical Education in the Community Hospitals—Philadelphia, Pa.

### 1963

January 20-25—American Academy of Orthopaedic Surgeons—Miami Beach, Florida

## Postgraduate Day in Gynecology at Vanderbilt University School of Medicine

The Department of Obstetrics and Gynecology of the Vanderbilt University School of Medicine will offer a one-day course in "Practical Gynecology and Endocrinology," on December 13, 1962. The emphasis of the course will be directed toward the diagnosis and management of common gynecological problems frequently encountered by the practitioner. A demonstration of the technique of culdoscopy will be given to those attending the course.

The course is acceptable for 6 hours of Category I credit by the American Academy of General Practice. Tuition is \$15, which includes the luncheon. For further information address the Department of Postgraduate Instruction, Vanderbilt University School of Medicine, Nashville.

## Middle Tennessee Heart Association

The Association is pleased to announce that Cardiac Day, the Annual Symposium on Heart Disease will be held at Vanderbilt University Hospital, December 6-7. Guest Speakers are: Dr. Albert A. Brust, Dayton, Ohio; Dr. Scott Butterworth, New York; Dr. Edgar Hull, New Orleans; Dr. Eugene C. Klatte, Nashville; Dr. Dwight C. McGoon, Rochester, Minn. and Dr. Lloyd H. Ramsey, Nashville.



## PLACEMENT SERVICE

*The Placement Service of the Tennessee State Medical Association is designed to assist doctors and communities to get together. Further information and contacts to both physicians and communities are available from the Public Service Office, 112 Louise Avenue, Nashville 5, Tennessee.*

### Locations Wanted

A Pediatrician, just completing active military duty, would like partnership or associate practice in any locality in Tennessee of 75,000 population, plus. Age 29; married; Jewish; Graduate Bowman Gray School of Medicine; residency training. Available now. LW-445

A 30 year old Dermatologist would like clinical or associate practice, with part-time teaching, in West Tennessee. Graduate of University of Texas Medical Division; married; Episcopalian. Available July 1963. LW-447

General practitioner, 34 years of age, graduate of University of Mississippi, interested in clinical or associate practice in any locality of Tennessee, 8,000 or over. Protestant; married; available now. LW-449

A Board certified Surgeon, 44 years of age, would like to establish associate practice in West Tennessee area of large population, or with excellent schools. Graduate of University of Michigan; residency training; married; presently in practice. Available immediately. LW-450

A general practitioner, 27 years of age, graduate of the University of Tennessee, would like associate practice in Middle or West Tennessee community of 5,000 to 50,000. Now in practice, wishes to move South. Married; Episcopalian; available immediately. LW-465

A 38 year old Radiologist, graduate of the University of Tennessee; would like clinical, assistant or associate practice in any size community in Tennessee, any locality. Just completing 4 years residency; holds Tennessee license; married; Methodist; available April 1963. LW-466

An Ob-Gyn, 32 years of age, graduate of the Northwestern University, just completing three years residency, would like associate or group practice in any locality of Tennessee. Married; Lutheran; available July 1963. LW-467

A 30 year old Ob-Gyn, graduate of University of Kansas School of Medicine, with three years residency training, would like associate practice in city of 100,000 or over. Married; Protestant; now on active military duty. Available July 1963. LW-468

A 31 year old General Surgeon, graduate of Tulane Medical School, would like clinical, associate, solo, or partnership practice in Middle or West Tennessee area of 10,000-30,000. Married; Methodist; is a candidate of American College of Surgeons. Available July 1963. LW-469

A 45 year old native Tennessean would like to return to this state and establish clinical, private or institutional practice in general psychiatry, anywhere in Tennessee. Graduate L.S.U.; married; Episcopalian. Available November 1962. LW-470

### Physicians Wanted

Physician in East Tennessee, 6,000 population, would like associate for general practice. Age 25-35, with one year internship. New, private office, with examining rooms and equipment available. Hospital located in community. PW-134

Middle Tennessee community of 8,000 in need of physician to practice internal medicine. Two years internship and one year residency preferred. Office space available. Hospital in area. PW-136

Community in southern part of Tennessee, population 500 plus, in need of a general practitioner. No other physician in area. Office space and some equipment available. PW-147

Hospital in upper East Tennessee, county population over 30,000, would like general surgeon to establish own surgical practice in area. Prefer physician with one year internship, three years residency, Board qualified or Board preferred. Good industrial area with excellent schools and churches, and recreational facilities. PW-173

Small north Tennessee town in great need of a physician. Approved for Sears-Roebuck Foundation assistance. No other physician in area. Medical economic survey report available upon request. PW-177

A town located in Kentucky, only a few miles from the Tennessee line, needs replacement for general practitioner. Housing available, large 7 room office completely equipped and furnished. Hospital 12 miles. PW-180

Town of 2,200, near large metropolitan area, would like general practitioner to establish practice. No other physician in immediate area. Will build office to suit physician. PW-182

Excellent opportunity to obstetrician or general practitioner to establish in East Tennessee city of 25,000. Office next to hospital for lease. Will introduce. Owner moving to Florida when occupant obtained. Deferred lease payments possible. PW-183

FOR SALE: practice, office and office equipment, in Middle Tennessee town of 6,000. Excellent opportunity for young physician. Terms. PW-184

Small upper East Tennessee community in need of physician to replace retired general practitioner. Approved for Sears-Roebuck Foundation assistance. Housing and office space available. Near industrial area. PW-185

## Reported Cases of Primary and Secondary Syphilis, Tennessee, 1959-1961

R. H. HUTCHESON, M.D., C. B. TUCKER, M.D., and SARA LOU HATCHER, M.A.,\*  
Nashville, Tenn.

*Of equal or even of greater importance than treatment of infectious syphilis is contact investigation. The ease of administration and relative cheapness of penicillin have moved, it is estimated, at least 50% of antisypilitic treatment into the doctor's office. There are estimates that practitioners report only about one-fourth of their cases, and therefore case finding goes by default. The control of the continued rising incidence of syphilis in recent years lies in the hands of the private physician—namely, in reporting, in adequate follow-up and in full cooperation with the investigators of the health departments in their search for contacts.*

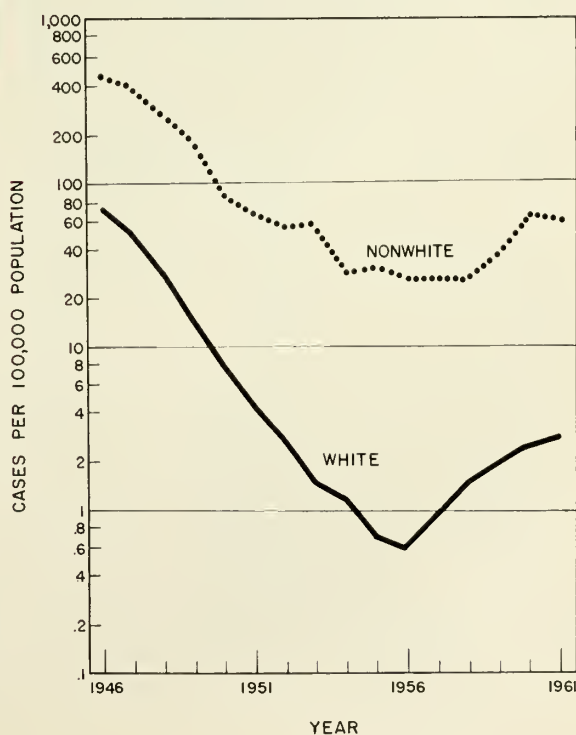
Following the introduction of penicillin and its use in controlling syphilis, there were many persons who, for more than ten years, believed that "penicillin" was the magic word which would eradicate venereal disease.<sup>1</sup> During these years (late 1940's and early 1950's) a decline in early syphilis was occurring, soon to be followed by increasing numbers of cases. In consideration of the general upsurge of reported cases of early syphilis during recent years, this article is presented to assess the situation regarding the incidence of the disease in Tennessee.

The number of reported cases and the case rate for primary and secondary syphilis in Tennessee declined sharply from 1946

through 1956. In 1946 there were 4,265 cases reported and the rate was 135.4 per 100,000 population while in 1956 there were 165 cases with a rate of 4.8 per 100,000 population (a 96% decline in both the number of cases and the rate). The white and non-white populations shared the decline, with the white population experiencing a 99% decline and the nonwhite a 94% reduction in both the number of cases and the case rate. The decline in the case rates by race is shown in figure 1.

Figure 1

REPORTED CASES OF PRIMARY AND SECONDARY  
SYPHILIS PER 100,000 POPULATION, BY RACE,  
TENNESSEE, 1946—1961



\*From the Tennessee Department of Public Health, Nashville, Tenn.



The increase which began in 1957 has continued through 1961 with the incidence for the three years 1959-1961 being twice that for the preceding three years. This discussion presents data for 1959-1961 and certain comparable data for the period, 1956-1958. The numbers of cases with rates per 100,000 population for each of the years, 1956-1961, were as follows:

| Cases |        |      |
|-------|--------|------|
| Year  | Number | Rate |
| 1956  | 165    | 4.8  |
| 1957  | 216    | 6.2  |
| 1958  | 192    | 5.5  |
| 1959  | 270    | 7.6  |
| 1960  | 448    | 12.6 |
| 1961  | 427    | 12.0 |

The average number of cases reported per year for the three-year period, 1959-1961, was 382 which gave a rate of 10.7 per 100,000 population. Both the average number of cases and case rate for the three-year period, 1956-1958, were only one-half as large (191 cases and a rate of 5.5).

Cases of primary and secondary syphilis were reported from 39 counties in 1959, 38 counties in 1960 and 36 counties in 1961. The counties which reported cases for each of these years varied with only 15 counties reporting cases for all three years. The average annual case rates per 100,000 population for the three years, 1959-1961, for the counties of the State are shown in figure 2. Fourteen counties had rates of 10.0 and over per 100,000 population and eight of these had rates which were more than double the rate for the State. Six of these eight counties with extremely high rates are rural counties while one is a county of intermediate size (includes a city of 10,000-99,999 population) and the remaining one is a metropolitan county.

Approximately one out of every six cases (16.9%) of primary and secondary syphilis reported during the three years, 1959-1961, was reported by private physicians. The percentages reported by private physicians varied according to the degree of urbanization of the counties (Table 1). For the four large-city counties, 16.2% of the cases were reported by private physicians, for the intermediate counties 9.5%, while for the rural counties 26.1% were reported by private physicians.

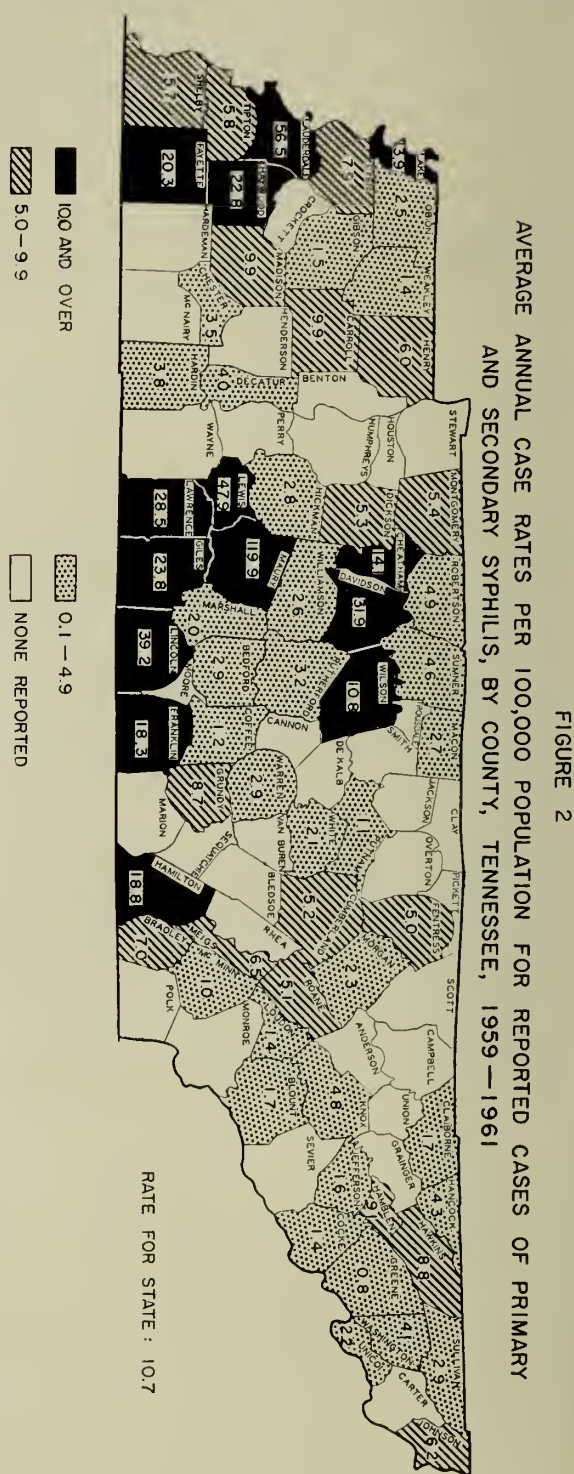


FIG. 2.

The case rates varied by age with young persons in the age group 20 to 24 years having the highest rate (55.6 per 100,000 population). Persons just younger and just older than this group experienced rates approximately one-half as large (15 to 19

Table 1

AVERAGE ANNUAL NUMBER OF REPORTED CASES OF PRIMARY AND SECONDARY SYPHILIS WITH NUMBER AND PERCENTAGE REPORTED BY PRIVATE PHYSICIAN, BY TYPE OF COUNTY, TENNESSEE, 1959-1961

| Type of County         | Number of Cases | Reported by Private Physician Number | Per Cent |
|------------------------|-----------------|--------------------------------------|----------|
| Total for State        | 382             | 65                                   | 16.9     |
| 4 large-city counties  | 220             | 36                                   | 16.2     |
| Intermediate counties* | 80              | 8                                    | 9.5      |
| Rural counties         | 82              | 21                                   | 26.1     |

\*Counties which include cities of 10,000-99,999 population according to 1960 census.

years had a rate of 29.7 and those 25 to 34 years of age had a rate of 22.0).

The case rate for the nonwhite population (52.8) was exactly 22 times as high as the rate for the white population (2.4). A difference this great or greater was noted for four of the five age groups. Both racial

groups reached a peak in the same age group, 20 to 24 years. The average number of cases per year and the average case rates by race and age for 1959-1961 and for 1956-1958 are given in table 2 and the case rates are shown in figure 3.

The distribution of the cases by race and age for the three years, 1956-1958, was approximately the same as for 1959-1961 with the rate in each race and age group for the earlier period being practically one-half the corresponding rate for 1959-1961.

Discussion

The incidence of early syphilis in Tennessee since 1945 follows rather closely that experienced throughout the United States—a steady decrease through 1956 followed by an increase in incidence. When the inci-

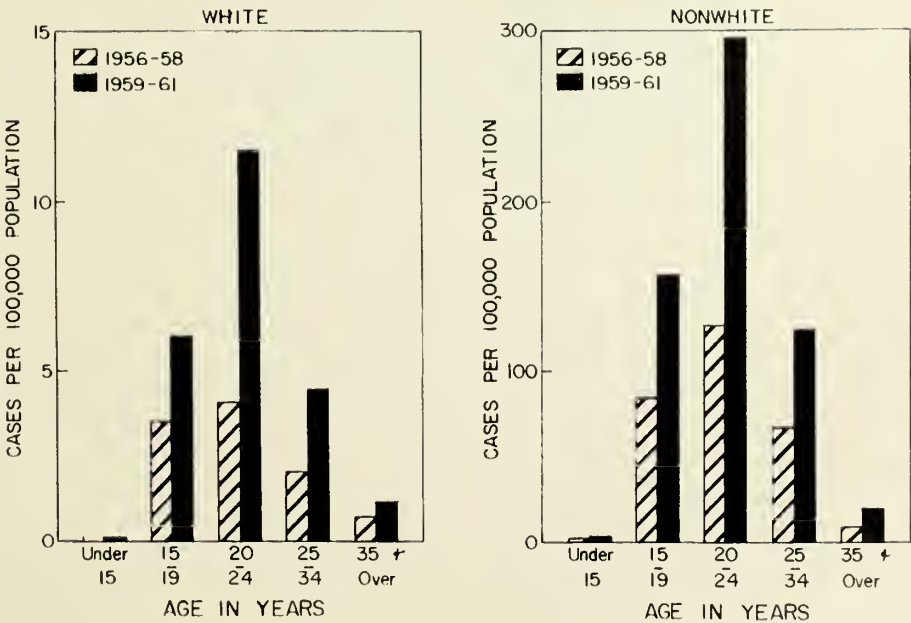
Table 2

AVERAGE ANNUAL NUMBER OF REPORTED CASES OF PRIMARY AND SECONDARY SYPHILIS WITH RATES PER 100,000 POPULATION, BY RACE AND AGE, TENNESSEE, 1959-1961 AND 1956-1958

| Age Group in Years | 1959-1961 |      |         |      |          |       | 1956-1958 |      |         |      |          |       |
|--------------------|-----------|------|---------|------|----------|-------|-----------|------|---------|------|----------|-------|
|                    | Total     |      | White   |      | Nonwhite |       | Total     |      | White   |      | Nonwhite |       |
|                    | Num-ber   | Rate | Num-ber | Rate | Num-ber  | Rate  | Num-ber   | Rate | Num-ber | Rate | Num-ber  | Rate  |
| Total              | 382       | 10.7 | 71      | 2.4  | 311      | 52.8  | 191       | 5.5  | 34      | 1.2  | 157      | 27.4  |
| Under 15           | 9         | 0.8  | 1       | 0.1  | 8        | 3.8   | 4         | 0.4  | —       | —    | 4        | 2.1   |
| 15-19              | 88        | 29.7 | 15      | 6.0  | 73       | 156.9 | 48        | 16.5 | 9       | 3.6  | 39       | 85.0  |
| 20-24              | 127       | 55.6 | 22      | 11.5 | 105      | 295.6 | 56        | 23.4 | 8       | 4.1  | 48       | 127.2 |
| 25-34              | 99        | 22.0 | 18      | 4.6  | 81       | 124.1 | 54        | 11.6 | 8       | 2.1  | 46       | 66.7  |
| 35 & over          | 59        | 4.0  | 15      | 1.2  | 44       | 19.8  | 29        | 2.1  | 9       | 0.7  | 20       | 9.4   |

FIGURE 3

AVERAGE ANNUAL CASE RATES PER 100,000 POPULATION FOR REPORTED CASES OF PRIMARY AND SECONDARY SYPHILIS, BY RACE AND AGE, TWO PERIODS OF TIME, TENNESSEE





dence of early syphilis decreased in this country federal appropriations for control of the venereal diseases were cut markedly. As a result, less emphasis could be placed on case finding which in turn permitted an increase in the incidence of the disease.

Infectious syphilis occurs in small outbreaks or epidemics. If these outbreaks are not checked the disease may be expected to spread. In order to control the disease, it is important that every case of infectious syphilis be interviewed for his sexual contacts and that these contacts be examined and treated where indicated.

The Tennessee Department of Public Health has trained investigators to interview infectious cases of syphilis, obtain the names of their sexual contacts, and see that the contacts are examined. Also the investigators obtain the names of the patient's associates and see that they are examined.

Often times a patient who would hesitate to give the name of a sexual contact will name that person as an associate.

The name of the patient is never revealed to a sexual contact or associate. In other words, information obtained from the patient is kept strictly confidential. To do otherwise would soon destroy the effectiveness of the investigator.

In order to effectively carry out a case finding program, it is necessary that all patients diagnosed as having early syphilis be interviewed by an investigator. This requires the complete cooperation of the private physician.

#### References

1. *Syphilis, Modern Diagnosis and Management*, 1960, Public Health Service Publication No. 743, U. S. Government Printing Office, Washington, D. C.

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#### LEGISLATION AGAINST SIDE EFFECTS?

The unexpected appearance of side effects in drug therapy has been and will be due not to inadequacy of laws but to the inadequacy of scientific knowledge. Protection against side effects cannot be legislated. There will always be instances where a drug will be prescribed, despite its side effects, because the alternative is worse. Every drug is to some extent toxic. Even the purest tap water can be harmful under certain conditions. A doctor must always weigh the disadvantages of a drug against the expected advantages. The best and most extensive legislation in the world will not help him in this decision. But restrictive legislation can tie his hands. The problem, I repeat, is not lack of legislation but lack of exact scientific knowledge. —Austin Smith, M.D., President, Pharmaceutical Manufacturers Association, to 16th Annual Convention, National Pharmaceutical Association, August 7, 1962.

From this interesting case report the author moves on to consider the knowledge which has accumulated upon the effects of electric shock upon the nervous system. Since such effects may be similar to the characteristics of multiple sclerosis, there has been much speculation as to possible common pathogenetic factors.

## Non-Fatal Electric Shock As It Instructs In The Enigma of Multiple Sclerosis With Presentation of A Case

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Following nonfatal electric shock, either from lightning or from an electric current, the damage to nerve tissues and therefore the resultant neurologic symptoms are often variable and frequently bizarre. Likewise, in multiple sclerosis, the neurologic changes can be characterized as variable, patchy and bizarre with an erratic clinical course. It is not surprising therefore that occasionally a patient suffering electric shock will exhibit symptoms that suggest multiple sclerosis to the physician.

In the medical literature the thread of logic that connects electric shock to a syndrome suggesting multiple sclerosis has been tenuous but nevertheless difficult to break. Undoubtedly there would be more such cases except that most persons suffering electric shock either promptly succumb or make complete recovery within a few days or weeks.<sup>1</sup>

### Electric Shock and the Nervous System

For many years physicians, particularly from rural sections, have reported the effects of lightning on the nervous system. The late effects described cover a wide spectrum of neurologic symptoms and signs.<sup>2</sup> Various neuropsychiatric changes have been noted, including vertigo with aphonia, and paranoid schizophrenia. Cases of lenticular degeneration, autonomic disorders, isolated peripheral neuropathies, polyneuritis, amyotrophic lateral sclerosis and hemiplegia also have been described following lightning stroke.

Also the late effects of accidental electric shock have been well documented and in-

clude injuries to the cerebrum, cranial nerves, brain stem and spinal cord.<sup>1</sup> Cases of Parkinson's syndrome, usually associated with other neurologic changes, and at least one case of sclerosis of the pyramidal tract following shock with high voltage electricity have been reported.

Because there have been few postmortem studies in human beings suffering late effect of electric shock, experimental studies in animals are particularly significant. The various tissues of the body apparently each conduct electricity with equal facility, the electric current choosing the shortest path from contact to contact with tissues acting as a structureless gel.<sup>3</sup> Morrison, Weeks and Cobb,<sup>4</sup> inducing electric shock in laboratory animals, found vascular lesions with hemorrhages in the central nervous system and, as late effects, frequently noted perivascular gliosis and patches of demyelination. Hartelius<sup>5</sup> in a careful study of the cerebral changes following electrically induced convulsions in cats noted changes in the glial cells and nerve cells, but was particularly impressed with vascular changes and concluded that an ischemic injury would explain the late changes observed.

Madow<sup>6</sup> has reviewed the neuropathology of electroshock in human beings. In 38 reported autopsies on human beings subjected to electric shock therapy vascular lesions as manifested in petechial hemorrhages were the most common findings.

### Cases in the Literature of Multiple Sclerosis Attributed to Electric Injury

Poledne,<sup>7</sup> in 1905, reported on a man of 21 years of age with multiple nonfatal neurologic symptoms of twelve years duration following a lightning stroke; he considered

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the diagnosis to be multiple sclerosis. Nis-  
tri,<sup>8</sup> in reviewing the literature on the neu-  
ropathology of lightning injuries, cites at  
least three other cases in the European lit-  
erature of multiple sclerosis subsequent to  
lightning injury. In a study of multiple  
sclerosis in North Wales, Allison<sup>9</sup> described  
two cases of multiple sclerosis with some-  
what unclear causal relationship between  
electric injury and the disease. Kecht<sup>10</sup> re-  
ported the case of a man who, four weeks  
following lightning stroke, had multiple  
neurologic signs and symptoms suggesting  
multiple sclerosis; symptoms were still  
present one year later. In reviewing the  
possible causes of multiple sclerosis, Miller  
and Schapira<sup>11</sup> present the case of a 47 year  
old man who developed typical multiple  
sclerosis following an accidental electric  
burn of the left hand.

#### Report of a Case

On October 1, 1954 a 43 year old housewife  
(T.S.), was thrown to the floor when a bolt of  
lightning struck at or near her house. She was  
unconscious for perhaps 5 minutes with tonic con-  
tractions of her musculature. After recovery of  
consciousness she had no significant symptoms  
except muscular tenderness until the 4th day  
when she noted the onset of ataxia, vertigo, blur-  
ring of vision, slowed mentation and marked  
weakness.

On several occasions before the accident the  
patient had undergone examinations at the Cum-  
berland Clinic without any disabling neurologic  
abnormality noted, although she had complained  
at various times of anxiety, fatigability, prick-  
ling parasthesias, muscular pains and gastroin-  
testinal symptoms. The examinations, including  
laboratory and x-ray studies, showed nothing ab-  
normal except for mild tremor of the hands and  
indefinite increase in muscle tonus of the neck.  
A diagnosis of neuromuscular pain with psycho-  
neurosis was considered most likely.

During the year before the lightning stroke the  
patient was seen on four occasions, and although  
she complained of some tremor, fatigability and  
anxiety she was able to do her housework and  
lead a rather normal life.

Following the lightning stroke the patient was  
examined first on the 7th day at her home and  
admitted to the hospital on the 19th.

At these consultations a remarkable change had  
occurred in her condition as compared with pre-  
vious examinations with the following definite  
findings observed:—anisocoria, nystagmus on lat-  
eral gaze, paralysis of upward gaze, past-pointing,  
dysmetria, adiadokokinesis on the right, absent  
position sense in all extremities, absent abdominal  
reflexes, positive Babinski reflex on the right, in-  
ability to taste on the left anterior tongue, hyper-

active tendon reflexes and paresis of both lower  
extremities. A lumbar puncture revealed a pres-  
sure of 150 mm. with normal response to the  
Queckenstedt maneuvers. Examination of the  
fluid showed a flat colloidal gold curve, 58 mg.  
per 100 cc. of sugar, 49 mg. per 100 cc. of protein  
and a negative test for syphilis. Laboratory tests  
and x-ray examinations of the skull and neck  
were normal.

It was obvious that a disseminated neurologic  
disorder of acute onset existed and that it most  
closely resembled severe multiple sclerosis. A  
consulting neurosurgeon concurred in this diag-  
nosis.

Except for some incomplete remissions the pa-  
tient's condition deteriorated for the remaining  
two years of her life. She was hospitalized ten  
times during this interval, with some variability  
noted in the findings. She developed marked  
cachexia, scanning type of speech, increased mus-  
cular tone in the extremities, severe emotional  
lability, and intermittent urinary and fecal in-  
continence. A second examination of the cerebro-  
spinal fluid showed no significant change from the  
previous study. She died at home and no autopsy  
was performed.

#### Discussion of the Case

This case raises several questions.

Was multiple sclerosis the correct diag-  
nosis? It certainly seemed so to those phy-  
sicians who cared for her. Multiple lesions  
would be required to explain the findings,  
and the course was quite characteristic of  
multiple sclerosis.

Did the patient have multiple sclerosis in  
mild form before the lightning stroke? This,  
of course, cannot be answered with cer-  
tainty. Cases of multiple sclerosis are fre-  
quently misdiagnosed as psychoneurosis in  
the early and milder stages, and multiple  
sclerosis may occur in a very mild form  
with prolonged remissions often of several  
years, separating slight episodes of neuro-  
logic disability. Yet the patient was under  
rather close observation during the years  
and months preceding the injury, and it is  
only in retrospect that the mild tremor, sub-  
jective weakness and increased muscular  
tonicity loom up as important amidst many  
other complaints thought at the time to be  
functional. If multiple sclerosis was pres-  
ent it existed in a very mild form, and there  
was a dramatic and deadly exacerbation  
after the injury.

Is there significance in the latent period  
of four days between the electric shock and  
the onset of neurologic symptoms? A num-  
ber of investigators have noted that persons

suffering from electric shock from any source may immediately recover only to have the onset of neurologic symptoms four to ten days after the injury.<sup>12-15</sup> This latent period suggests that the symptoms derive from some process that requires several days to materialize, as is encountered in immune reactions<sup>16</sup> or as a result of anoxia.

### The Etiology of Multiple Sclerosis

The literature on the etiology of multiple sclerosis is voluminous, with many widely differing theories. The speculations on the cause of multiple sclerosis are reminiscent of the early speculations on the etiology of diabetes. It is possible that some investigator with a germinal discovery will promptly put to rest all the theorizers; even more likely may be the realization that multiple sclerosis is not a single etiologic entity but a recurring pattern of neurologic change produced by various etiologic processes and agents.

Perhaps the most widely accepted theory of the causation of multiple sclerosis at present is that, like acute disseminated encephalomyelitis, it represents an allergic response of the central nervous system to a toxic or infectious assault.<sup>17</sup> This theory of etiology is supported by the observations that injection of white matter of the central nervous system into many laboratory animals produces a perivascular mononuclear reaction with a demyelination resembling both encephalomyelitis and multiple sclerosis, and that cases resembling multiple sclerosis have followed Pasteur prophylaxis for rabies.<sup>18</sup>

Thorough search for chemical abnormalities in the blood or spinal fluid has been rather fruitless, although it is known that the gamma globulin and lipoproteins are increased in the spinal fluid of many patients with multiple sclerosis.

Because multiple sclerosis has been observed in twins and with apparent increased incidence in some families, a hereditary or genetic factor has been proposed. The validity of this relationship is supported by the development of strains of mice that are highly susceptible to demyelination.

Efforts to find a bacterial or viral origin for multiple sclerosis have been in general disappointing. Acid-fast bacilli, spirochetes and nonhemolytic streptococci have been

reported in the spinal fluid of multiple sclerosis victims. These microorganisms seem to have a propensity for being discovered in various body fluids of patients with disorders of unknown etiology.

Circulatory changes in small vessels of the nervous system have intrigued many investigators of this puzzling disease. Microthrombosis, sludging, and localized vasospasm are difficult processes to study but are considered by many to be essential factors in the chain of events producing multiple sclerosis. In the early stages of plaque formation there are observable vascular changes, and the perivascular distribution of many of the areas of destruction has been noted. Rather consistently in the literature studying the effects of electric shock, comments are noted that blood vessel injury with local ischemia could account for most of the observed later effects.<sup>5</sup>

Finally, psychiatric studies of persons with multiple sclerosis have shown challenging correlation between psychosexually and emotionally immature individuals and multiple sclerosis, and between emotionally traumatic experiences and the onset of the disease, possibly mediated through vasomotor reflexes.

What can we learn by relating the studies of the effect of electric injury on the central nervous system to the studies on the etiology of multiple sclerosis? It can be postulated that in some cases of electric injury pathogenetic processes are initiated that are similar in some respects at least to those that produce multiple sclerosis. What these processes are will be discovered by basic research on what happens to the central nervous system when subjected to noxious agents and processes. The studies that have been made in induced electric shock and in experimental allergic encephalomyelitis suggest that vascular changes or auto-immune reactions may be essential factors in the pathogenesis of multiple sclerosis. Since leukocytes are known to transfer delayed sensitivity in some types of hypersensitivity reactions there may be both a vascular and auto-immune factor in multiple sclerosis.<sup>16</sup>

### Summary

A case in which multiple sclerosis was either drastically accentuated or initiated



by lightning stroke is presented, with review of the literature of occasional similar cases. A brief survey is given of the literature on the neurologic effects of electric injury and of the etiology of multiple sclerosis. The mutual incidence of vascular and perivascular lesions, a latent period and demyelination in the earlier stages of both conditions is noted with brief discussion of their possible significance in eventual solution of the riddle of multiple sclerosis.

### References

1. Langworthy, O. R.: Neurological Abnormalities Produced by Electricity, *J. Nerv. & Ment. Dis.* 84:13, 1936.
2. Panse, F.: Uber Schädigungen des Nervensystems durch Blitzschlag, *Monatsschr. Psychiat. u. Neurol.* 59:323, 1925.
3. Weeks, A. W. and Alexander, L.: The Distribution of Electric Current in the Animal Body: An Experimental Investigation of Sixty Cycle Alternating Current, *J. Indust. Hyg.* 21:517, 1939.
4. Morrison, L. R., Weeks, A. W. and Cobb, S.: Histopathology of Different Types of Electric Shock on Mammalian Brains, *J. Indust. Hyg.* 12:324, 1930.
5. Hartelius, H.: Cerebral Changes Following Electrically Induced Convulsions. An Experimental Study on Cats, *Acta psychiat. & neurol. scandinav. Suppl.* 77:1, 1952.
6. Madow, L.: Brain Changes in Electroshock Therapy, *Am. J. Psychiat.* 113:337, 1956.
7. Poledne, V.: Pripad schlerosis multiplex cerebrosinalis po ponneni bleskem. *Casop. lek. cesk.* 44:1171, 1905.
8. Nistri, M.: Storia e sinossi della neuropatologia da fulmine, *Riv. pat. nerv.* 71:621, 1950.
9. Allison, R. S.: Disseminated Sclerosis in North Wales. An Inquiry Into Incidence, Frequency, Distribution and other Aetiological Factors, *Brain* 53:391, 1931.
10. Kecht, B.: Uber central-nervose blitzschlag folgen, *Wien. med. wchnschr.* 100:248, 1950.
11. Miller, H. and Schapira, K.: Aetiological Aspects of Multiple Sclerosis. I. *Brit. M. J.* 1:737, 1959.
12. Alexander, L.: Clinical and Neuropathological Aspects of Electric Injury, *J. Indust. Hyg.* 20:191, 1938.
13. Djournio, A.: Neurologic Disorders Due to Electricity, *Presse med.* 60:1392, 1952.
14. Girard, P. F., Garde, A. and Jacquet: Polynéuro-radiculite de type Guillain-Barré à forme acrodynique survenue dans les suites d'une fulguration, *Lyon med.* 191:209, 1954.
15. Woods, J. D.: Spinal Atrophic Paralysis Following Lightning Stroke, *South African M. J.* 26:92, 1952.
16. Lawrence, H. S.: The Relevance of Delayed Allergy and Homograft Sensitivity to Auto-immune Disease, *Bull. Rheumat. Dis.* 12:279, 1962.
17. Ferrare, A.: Studies on Multiple Sclerosis, *J. Neuropath. & Exper. Neurol.* 17:278, 1958.
18. Dixon, F. J.: Autoimmunization. *World-Wide Abstr. Gen. Med.* 4:8, 1961.

### NOTES CONCERNING THE BEGINNING OF CENTRAL STATE HOSPITAL

In November of 1847 Dorothy Lynde Dix a New England school teacher came to Nashville to the home of Dr. Boyd McNairy, who was the father of an early superintendent of the first mental hospital in Tennessee.

Miss Dix made a survey of conditions in the existing hospital and made a dramatic appeal to the Legislature for a new hospital. She pointed out the defective heating apparatus, the absence of bathrooms, the inadequate kitchens and laundry, the lack of water, etc. She spared no words in her scathing rebuke, she played on their sense of justice and liberality, their pride of State. She compared the activities of sister states and reviewed in great detail the potentialities for relief of mental illness in hospitals properly conducted and financed. Her invasion of Tennessee was successful and the Legislature on February 8,

1848, passed an act authorizing a commission to establish a new hospital "sufficient for the care and safekeeping of at least 200 persons." A site was soon selected—the place of the late Henry Dickinson. "There is no lovelier spot in the State of Tennessee for the object." (Two hundred and fifty-five acres six miles from Nashville), and Dr. John S. Young was appointed to visit the best known hospitals of the country to obtain first-hand knowledge of the virtues of these institutions. He made his report within a few months. "It was proposed to adopt the plan of the Providence Asylum, which was modeled after the Maidstone Asylum in England, the warming processes of the New Jersey Asylum at Trenton, the ventilating process of the McLean Asylum, and the grounds to be laid out after the manner of the Bloomingdale." (*From the Central State Hospital Bulletin*, Oct. 29, 1962.)

## CLINICAL NOTES FROM THE TENNESSEE HEART ASSOCIATION

### THE SURGICAL TREATMENT OF COMPLETE HEART BLOCK\*

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The clinical course of patients with complete heart block is characteristically unpredictable. While complete atrioventricular dissociation can occur at any age and from multiple causes, it is most frequently encountered in individuals past middle age with coronary artery disease. In some patients, complete asystole or transient episodes of ventricular fibrillation or flutter can produce temporary loss of consciousness—the dramatic Stokes-Adams syncope. Other patients with ventricular rates of 40 to 50 lead long and productive lives, although usually at a level substantially reduced from normal. The ventricular rate may become so low that congestive heart failure due to low cardiac output appears in other patients. The average survival following development of permanent complete heart block was slightly over two years in a series of 224 patients reported by Penton, Miller, and Levine.<sup>1</sup> While a certain number of these deaths undoubtedly are caused by the underlying cardiac disease, a significant number result from disturbances of the conduction mechanism. In those patients with low cardiac output or repetitive Stokes-Adams attacks, it is possible to pace the heart electrically for prolonged periods.

Treatment of patients with permanent complete heart block logically consists of two parts. The first and generally the most urgent is the treatment, immediate or preventive, of the syncopal attacks. The second is the treatment of the more static slow heart rate that usually accompanies this condition. Fortunately the syncope associated with complete heart block tends to be transient in nature. Obviously if the syncope persists for longer than two to three minutes, it is necessary to institute cardiac resuscitative measures before the central nervous system is irreparably damaged.

Such measures might include external cardiac massage as well as external ventricular defibrillation. In certain instances when syncopal attacks recur frequently the use of an external electric stimulator, as originally suggested by Zoll,<sup>2</sup> becomes necessary. Another method for stimulation of the heart under such circumstances is the passage of an electrode catheter into the right ventricular cavity through an accessible vein.<sup>3</sup> Either of these methods is satisfactory for short term stimulation of the heart. But the patient's comfort and the threat of infection dictate a completely implantable pacemaker and electrodes for long term application.

For chronic cases of permanent complete heart block with low output, or for patients with recurrent syncope at frequent intervals, numerous types of implantable pacemakers and electrodes are available commercially. Most units are powered with mercury batteries which have a predicted life of four to five years when emitting a stimulus 60 to 80 times a minute. Since the stimulating unit, timer, and batteries are contained in a small box placed subcutaneously, it is easy to insert a new unit if this becomes necessary. The electrodes attached directly to the left ventricular myocardium need not be disturbed. Much of the difficulty arising from the use of implantable pacemakers has been due to failure of the electrode. The utilization of a platinum-iridium coiled electrode introduced by Chardack<sup>4</sup> has minimized this problem. Several investigators are now reporting extremely encouraging results in large numbers of patients with complete heart block treated by the implantation of pacemakers. Such results hold promise of a more rewarding future for those individuals with complete heart block, a previous therapeutic dilemma, and are a tribute to the cooperation between physicians and electronic engineers.

#### References

1. Penton, G. B., Miller, H., and Levine, S. A.: Some Clinical Features of Complete Heart Block, *Circulation* 13:801, 1956.
2. Zoll, P. N.: Resuscitation of the Heart in Ventricular Standstill by External Electric Stimulation, *New England J. Med.* 274:768, 1952.
3. Furman, S., and Robinson, G.: The Use of an

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Extracardiac Pacemaker in the Correction of Total Heart Block, *Surg. Forum* 9:245, 1959.

4. Chardack, W. M., Gage, A. A., and Greatbatch, W.: Correction of Complete Heart Block by a Self-Contained and Subcutaneously Implanted Pacemaker, *J. Thor. Cardiovas. Surg.* 42: 814, 1961.



## AN APPROACH TO THE DIAGNOSIS AND MANAGEMENT OF PERIPHERAL ARTERIAL DISEASE

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(Continued from page 440, November 1962)

### Treatment

Having arrived at a diagnosis in this fashion, the matter of management of the patient presents itself. It is obvious that the management of syndromes of vascular disease requires a thorough knowledge of the available technics (both operative procedures and chemotherapy) as well as a considerable degree of that nebulous element termed "surgical judgment." The definition and description of "surgical judgment" as related to any one specific therapeutic objective is a profound subject, entirely beyond the scope of this text. Therefore the following basic principles of therapy are presented only as a guide, having been useful to the author in deciding specific therapy for vascular disease.

#### *Principles of treatment.*

##### *A. Mechanical occlusive problems.*

(1) If the block is extrinsic, remove it (for example, costocervical rib syndrome, carpal tunnel syndrome, anterior tibial syndrome, etc.).

(2) If the block is intrinsic, and both discrete and segmental, endarterectomy, with or without a patch or on-lay graft is indicated (for example, occlusion of the common femoral bifurcation by discrete atherosclerotic disease, occlusion of the carotid bifurcation by discrete atherosclerotic disease, etc.).

(3) If the block is intrinsic, segmental, but not discrete, either a bypass graft or (less commonly) resection and a graft is indicated. Evaluation of the "run-off" or collateral circulation by arteriography is necessary prior to operation. Absence of an adequate "run-off" is usually indicative of slight chance of success.

(4) If the block is due to a fresh thrombus or embolus, the preferred treatment is endarterectomy. However, if the lesion is inaccessible or the patient too ill to withstand the major operative procedure, the use of fibrinolytic agents and anticoagulants may present useful adjunctive or "compromise" therapy. Currently available preparations of fibrinolysin should probably be limited to intra-arterial administration or to regional perfusion technics. However, as these agents are further refined the systemic administration may become feasible.

(5) One must maintain constant awareness that the spastic element may become a significant parameter of the total pathologic change in an acute mechanical occlusive vascular problem, and that tissue death may frequently be obviated by the judicious use of antivasospastic therapy as an ancillary measure.

(6) Amputation, or surgical extirpation, is used only as a last resort to preserve life or vital function. (There are obvious socioeconomic factors which by practical necessity must influence the decision regarding election of the proper time for extirpation, especially the election of the time and site for amputation in severely diseased extremities.)

##### *B. Spastic occlusive disease.*

(1) One must evaluate the responsiveness of the arterial vascular bed to available vasodilator drugs and/or sympathectomy. This is accomplished by testing with measurement of the skin temperature, oscillometry, and plethysmography, a therapeutic trial of the following drugs: azapeptine (Ilidar), mylidrin Hcl (Arlidin), tolazoline Hcl (Priscoline), nicotinyl alcohol (Roniacol), Rauwolfia, relaxin, and selective sympathetic blockade with a local anesthetic agent. (One should also include in the diagnostic evaluation examinations to define the presence or absence of collagen disease.)

(2) Sympathectomy is generally preferred to vasodilator drug therapy in causalgia, post-frostbite syndrome, and other sympathetic reflex dystrophies. Evaluation of the potential for hemometakinesia<sup>5</sup> (the "borrowing-lending syndrome") is essential prior to sympathectomy in the diseases which may combine mechanical occlusive

and spastic occlusive elements (especially atherosclerosis).

*C. Plastic occlusive disease.* The acute phase of circulatory embarrassment due to intravascular hemagglutination is regularly seen in such syndromes as acute arterial thrombosis or embolus, septic shock, oligemic shock with hypoxic acidosis, the "post-perfusion syndrome," following angiography with injection of radiopaque agents, following thermal burn, and in hyperlipemic crisis. This acute phase (which may be lethal if the sludge formed is rigid, as in the above-listed syndromes) may be successfully inhibited by infusion of 10% low molecular weight dextran in normal saline. The dosage at the present time is empirical, and is monitored by frequent observations of the patient's arterial blood pressure, central venous pressure, and conjunctival microcirculation. There is also evidence that large doses (1000 mg. per day) of ascorbic acid intravenously is useful in combating certain types of blood sludge. There is further evidence that the intravenous use of heparin is a useful adjunctive measure in the management of the acute intravascular hemagglutination problem. The treatment of the chronic intravascular hemagglutination, such as is encountered in hyperlipemia, xanthomatosis, malaria, atherosclerosis, etc., is at present in a state of flux with little agreement regarding the necessity of specific measures of therapy. It is probable that the clinician's attention at the present time should be directed primarily toward the acute phase of plastic occlusive vascular disease, especially as encountered in association

with mechanical and spastic vascular problems. It is hoped that some resolution of the controversies in this area will be achieved in the near future.

*In conclusion,* this presentation is offered as a plea for the development and utilization of a systematic approach to the evaluation and management of peripheral vascular disease. An example of such an approach is described. The presentation is not intended to argue the specific merits of any one therapeutic procedure over another, for any one specific problem. It is rather intended to motivate those who deal with vascular disease problems to approach these problems with a broad perspective, keeping in mind the various potentials of pathologic physiology which will comprise the total disease state of a specific diagnosis of peripheral vascular disease.

#### References

1. Stallworth, J. M., Lee, W. H., Jr., and Jeffords, J. V.: Methods Used to Evaluate Vasodilator Drugs, *Angiology* 9:368, 1958.
2. Lee, W. H., Jr., Krumhaar, D., Folkalsrud, E. W., Schjeide, O. A., and Maloney, J. V., Jr.: Denaturation of Plasma Proteins as a Cause of Morbidity and Death after Intracardiac Operations, *Surgery* 50:29, 1961.
3. Long, D. M., Sanchez, L., Varco, R. I., and Lillehei, C. W.: The Use of Low Molecular Weight Dextran and Serum Albumin as Plasma Expanders in Extra Corporeal Circulation, *Surgery* 50:12, 1961.
4. Knisely, M. H.: An Annotated Bibliography on Sludged Blood, *Postgrad. Med.* 10:15, 1951.
5. DeBakey, M. E., Burch, G. E., Ray, T., and Ochsner, A.: The "Borrowing-Lending" Hemodynamic Phenomenon (Hemometakinesia) and its Therapeutic Application in Peripheral Vascular Disturbances, *Ann. Surg.* 126:850, 1947.

#### UNIFORMITY IN STATE DRUG LAWS

If the city of New York were to attempt to regulate drugs in county-wide channels of commerce, and other cities and states were to follow this example, a chaos of conflicting local and state requirements would be imposed on drug manufacturers throughout the country. This would be reflected in the cost of the drugs to the users. It would burden the industry in such a way as to make trade practically impossible. For many years we have supported efforts to achieve uniformity of food and drug legislation so as to give the consumer the greatest benefit of all advances and impose the least burden on industry.—Leona Baumgartner, M.D., New York City Health Commissioner, to House Interstate and Foreign Commerce Committee, May 17, 1962.



## OSTEOMA OF THE FRONTAL SINUS: A Case Report\*

WALTER E. DAVID, M.D., Memphis, Tenn.

A twenty year old colored man was seen in the emergency room of the John Gaston Hospital on Jan. 12, 1962, with the *chief complaint* of swelling above the left eye of 3 months duration.

For approximately 2 years, the patient had noted a bony hard protrusion of the left side of his forehead. This had not been tender and he had not had headaches. There had been no significant discharge from the nose and his olfactory sense had not been affected. He remembered having fallen on an iron farm implement and sustaining a head injury at about 8 years of age.

Two months prior to admission, the patient stated that he developed a soft tender swelling over the left eye. He consulted his family physician, who incised the mass and treated him with penicillin. Pus was obtained on opening the mass, and the incision had been re-opened on two occasions, the last time being 2 days prior to admission to the hospital.

*Physical examination* of the patient revealed no evidence of disease other than that related to the frontal sinus. There was a tender, fluctuant area approximately 2 cm. in its greatest diameter extending downward from the left supraorbital ridge above the inner canthus of the eye. There was an almost completely healed incision 1 cm. in length in the center of the mass. A small amount of thick, yellow, purulent material could be expressed from the mass. In addition to this area, there was a bony hard prominence above the left supraorbital ridge which measured 6 cm. in greatest diameter and extended 1 cm. to the right of the midline. This prominence was not tender. Extraocular muscle function was normal. Examination of the nose revealed a normal appearing mucous membrane, no congestion of the turbinates, no purulent secretions and no evidence of tumor.

A complete blood count and urinalysis were within normal limits. The VDRL test was negative. X-ray films of the paranasal sinuses revealed a multilobulated dense mass in the left frontal sinus. The mass conformed to the configuration of the sinus and there was a lobulation which projected down into the ethmoid area. There was some sclerotic change about the margin of the sinus.

On Jan. 17, 1962, the patient was taken to surgery and an external frontal sinusotomy was performed under local anesthesia using 2% lidocaine to block the supraorbital and supratrochlear nerves bilaterally. An incision was made over the left brow beginning approximately 1 cm. lateral to the supraorbital nerve and extending to the midline. Then a vertical incision was made from

the medial end of this incision to the upper limit of the mass. The incision was made through the periosteum, which was elevated in all directions to expose the frontal bone. Superiorly the anterior wall of the sinus was extremely thin and was perforated while elevating the periosteum. The anterior wall of the sinus was removed by using the Jordan Day drill and a gouge. After removing the anterior wall, the tumor was simply pried out.

The tumor was a multilobulated mass of dense bone with no attachment to the wall of the sinus and measured 4 by 6 by 3 cm. It was covered by a thin membrane. There was a projection on the posterior surface approximately 1 cm. in diameter which had eroded the posterior wall exposing the dura mater. Inferiorly there was a similar projection which extended into the ethmoid area. Medially the frontal septum was absent.

The sinus mucosa was edematous but the right nasofrontal duct was patent. There was a 3 mm. opening from the left ethmoid area into the middle meatus of the nose.

The mucosa of the right frontal was removed with a polishing burr down to within 5 mm. of the nasofrontal duct; the duct was left intact. On the left all the mucosa was removed and the bone polished with a polishing burr. A hard rubber drain was inserted through the opening into the middle meatus of the nose and the incision was closed in layers. The patient was placed on prophylactic tetracycline. He was afebrile during his entire postoperative hospital course. The hard rubber drain was removed and the patient discharged on the 6th postoperative day. He was last seen in the out patient department on Feb. 7, 1962, at which time he was asymptomatic and had no significant nasal discharge.

### Discussion

From a review of the literature, one might be led to believe that osteoma of the frontal sinus is a common malady. One author states that 50% of the tumors of the parafacial spaces are osteomas.<sup>1</sup> However, in reviewing the cases of tumors of the paranasal sinuses, both benign and malignant, admitted to the John Gaston Hospital between January 1, 1950, and January 1, 1960, it was found that only one of the 49 cases was an osteoma. This was a small asymptomatic tumor that did not require surgery. Another author states that only 9 cases of osteoma of the frontal sinus were in the Cincinnati General Hospital during the ten years preceeding 1956 and only one required surgery.<sup>2</sup> A series of cases collected from the literature up to 1938 showed that 38% of the 455 occurred in the frontal sinus.<sup>1</sup>

It is generally stated that osteomas of the paranasal sinuses occur more frequently in

\*Read at the meeting of the Tennessee Academy of Ophthalmology and Otolaryngology, April 10, 1962, Memphis, Tenn.

males and usually before age fifty. The rate of growth of the tumor is unpredictable, growth potential being greater in the younger age group.

Symptoms depend upon the direction of growth and the structures involved. They may be listed as follows: pain, either generalized headache, localized pain over the sinus or pain behind the eye; deformity; visual disturbances; infection; nasal obstruction; and post nasal drip.<sup>1, 3, 4</sup>

The cause of these tumors is not definite. One author<sup>2</sup> lists the accepted opinions as:

- (1) They develop from embryonic cartilaginous cells at the junction of the frontal and ethmoid bones.
- (2) They generate from the frontal sinus periosteum.
- (3) They originate from the diploe.
- (4) They are caused by inflammation.
- (5) They are formed from ossification of polyps.

In addition, it is believed by some that trauma may precipitate the development of these tumors.<sup>3</sup>

Grossly the tumor is spherical, ovoid or lobulated, and is initially attached to the wall of the sinus by a pedicle. Later the

pedicle may be obliterated and the tumor found unattached.<sup>3</sup> On cross section it appears laminated. They have been classified as compact, cancellous or mixed, depending upon the type of bone of which they are composed.<sup>2</sup> Microscopically they are covered by mucoperiosteum continuous with that lining the sinus.<sup>3</sup> Diagnosis is made by x-ray examination.

As in the case of symptomatology, the complications depend upon the direction of growth and structures involved. They may be listed as follows: cerebrospinal rhinorrhea, pneumocephalus, intracranial infection, orbital displacement, orbital destruction or soft tissue abscess.<sup>3</sup>

### References

1. Zovickian, Anthony and Cooper, Philip: Osteoma of the Frontal Sinus: Removal Combined with Immediate Repair of the Frontal Bone Defect, *Plastic & Reconst. Surg.* 19:150, 1957.
2. Cerri, S., and Pifer, W. H.: Osteoma of the Frontal Sinus, *Virginia M. Month.* 83:514, 1956.
3. Andrew John: Osteoma of the Paranasal Sinuses, *Brit. J. Surg.* 43:489, 1956.
4. Rao, A. B. N.: A Case of Osteoma of the Fronto-Ethmoidal Region, *J. Laryng. & Otol.* 72: 830, 1958.

## HISTORICAL

The first annual announcement of the Medical Department of the University of Nashville was printed in the April, 1851, issue of the *Nashville Journal of Medicine and Surgery*.

The faculty of the new Medical Department was as follows:

John M. Waton, M.D., Professor of Obstetrics, and the Diseases of Women and Children.

A. H. Buchanan, M.D., Professor of Surgery.

W. K. Bowling, M.D., Professor of the Institutes and Practice of Medicine.

C. K. Winston, M.D., Professor of Materia Medica and Clinical Medicine.

Robert M. Porter, M.D., Professor of Anatomy and Physiology.

J. B. Lindsley, M.D., Professor of Chemistry and Pharmacy, and Dean of the Faculty.

William T. Briggs, M.D., Demonstrator of Anatomy.

Fees required of the students were:

|                               |         |
|-------------------------------|---------|
| Tickets of all the Professors | \$90.00 |
| Matriculation Ticket          | 5.00    |
| Graduation Fee                | 20.00   |
| Dissecting Ticket             | 10.00   |

The Matriculation Fee is to be paid but once, and the Dissecting Ticket is optional with the student.

Any of the Tickets may be omitted at the option of the Student, but all must be taken in order to graduate, or to secure a credit for a full course.

Good board, including light and fuel, can be obtained in the city at from \$2.50 to \$3.00 per week.

Some of the comments concerning the new Medical College were interesting: "From all quarters we have assurances from students themselves, by letter, that we will have a large class. We can only say that we will be prepared for them, and that we have every reason to believe that they will receive every advantage from a course here that they could secure anywhere. To the croakers, if there be any, we say you are again destined to disappointment. To that unfortunate class of young men who would go to China to study the properties of dogfennel, and who imagine that a bone in Philadelphia is but a cartilage in Tennessee, what can be say? Our advise to them would be similar to that given Blackmore by Sydenham, when asked what books he should read to make himself a physician—"Don Quixote," said Sydenham—meaning that no matter what he read he would never make a physician." (*Historical Note printed in the Central State Hospital Bulletin, Oct. 29, 1962.*)



## CLINICOPATHOLOGIC CONFERENCE

### Parathyroid Adenoma\*

This 35 year old white man was hospitalized for a period of 32 days. His chief complaint on admission was "kidney stones." He first began having trouble with kidney stones 3 years prior to admission, and during this period had been hospitalized on four occasions. Ten days before admission the patient passed a stone approximately one-eighth inch in diameter. He stated that he had passed six to eight stones during the previous year. The patient had noted increased frequency of urination, and nocturia of one to two times per night. He coughed every morning for about ten minutes, and said he had sinus trouble. He also reported being allergic to penicillin. The *system review, family history and social history* were otherwise noncontributory.

*Physical examination* revealed a 35 year old white man in no acute distress. T. was 97.4° F., P. rate 80, R. 18, and B.P. 112/70. Pupils were round, regular, and reacted to light. Extra-ocular movements were intact. Trachea was in the midline; there was no adenopathy. The lungs were clear; chest expansion was equal. Cardiac P.M.I. was located in the 6th interspace at the midclavicular line. Cardiac rate and rhythm were normal and there were no murmurs. The historian notes that the patient was bandaged in the right lumbar region and states that the patient reported drainage from this area "since the operation." (No other data is given on this hospital record; however, the patient had been hospitalized 2 months previously, at which time a stone was removed from the right ureter through a flank incision.) The patient stated that there was some blood at first, but subsequent drainage resembled urine. There was tenderness to palpation in this area, as well as along the left iliac crest. There was also tenderness to palpation over the left and right kidney areas. Extremities, skin, and neurologic examination were negative.

Admission urinalysis revealed a specific gravity of 1.015, 1+ albumin and was negative for sugar; there were 100-150 WBC. with clumps, 100-250 RBC., some bacteria, and occasional epithelial cells. The admission P.C.N. was 42.5%; Hgb. 14.0 Gm.; WBC. count, 15,550 with 80% segs. and 14% lymphs. Platelets were adequate and red cell morphology was normal. Admission BUN. was 14 mg.%. Admission x-rays of the abdomen revealed several small irregular calcific densities over the right kidney in the midportion, and in the mid- and lower portions of the left kidney. Overlying the lower right ureter, just below the right transverse process of L-4 was a 1.0 cm. ovoid calculus.

Other x-ray studies 7 days following admission,

\*From the Departments of Internal Medicine and Pathology, Methodist Hospital, Memphis, Tenn.

revealed calculi in the region of the right ureter. Two days later no changes were noted. Eleven days after admission the stone previously noted over the left kidney was found in the region of the proximal ureter. At this time excretory urograms revealed evidence of caliectasis on the right; and in the ninety minute films, both previously described large stones were back in the renal collecting system. At this time, a view of each hand was interpreted as negative for evidence of subperiosteal bone resorption. Retrograde pyelograms showed good visualization of calyces and pelvis, and were interpreted as showing left inferior calyceal stones. Obstructing stones previously described in both proximal ureters were not seen at this time. Five days later, an abdominal film again showed a stone in the lower calyx in the left kidney, but no stone shadows were seen along the course of indwelling ureteral catheters. A right retrograde pyelogram 18 days after admission showed good visualization of the pelvis and calyces. Ten minutes later, there was some drainage of opaque material with visualization of the lower third of the right ureter and a portion of the middle third; however, considerable contrast material remained in the pelvis.

The patient was taken to the operating room on the day after admission and an attempt was made to remove the stone in the right ureter. This was unsuccessful; however, the stone was subsequently noted in the urinary bladder. At the end of the procedure, there were five ureteral catheters past the stone and one catheter up to the stone. A No. 22 urethral catheter was left in the bladder. Eleven days after admission, cystoscopy was again done. The catheters were passed to the right kidney, one of which entered the old sinus tract and was removed. The catheters were also passed to the left kidney.

Other laboratory data are as follows:

| Hospital<br>Day | Calcium<br>(mEq/l) | Phosphorus<br>(mg.%) |
|-----------------|--------------------|----------------------|
| 5               | 6.3                | 2.2                  |
| 10              | 6.6                | 1.3                  |
| 13              | 6.5                | 1.05                 |
| 13 (P.M.)       | —                  | 1.2                  |
| 14              | 6.0                | 2.0                  |

On day 13 the BUN. was 12 mg.%, Na 144, K 3.6, Cl 110, and CO<sub>2</sub>, 21.5 mEq/L. (During the previous hospitalization calcium values ranged from 5.9 to 6.2 and phosphorus between 2.3 and 2.8 mg.%. Quantitative urine calcium studies on three successive days revealed 0.17-0.3 Gm./24 hrs.)

Urine culture on the second hospital day revealed *Pseudomonas* sensitive to Kantrex and neomycin. A culture of the flank wound revealed *pseudomonas* and coagulase-negative staphylococci sensitive to kanamycin, neomycin, and mandelamine.

Eleven days after admission the patient passed a large stone and the following day four more calculi were passed. At this point the patient was

febrile, with temperatures up to 104.8°F. On the 13th hospital day the temperature reached 105°F., P. 140. Therapeutic efforts included chlorpromazine, mandelamine, meperidine H Cl., intravenous fluids, nitrofurantoin, and "temperature measures."

Exploratory operation was carried out on the 14th hospital day.

#### Discussion

DR. C. HAROLD STEFFEE: I don't propose to read the entire protocol verbatim, but I shall go through and more or less paraphrase it. This is a 35 year old man who gave a history of multiple episodes of kidney calculi. Many stones were passed. Sometimes hospitalization was required, sometimes manipulation was required, but this is a history of considerable length. On his most recent hospital admission, the physical findings were given and they are essentially unremarkable. He had had a pyelotomy at his previous hospitalization and this wound was still draining at the time of this hospitalization.

His urinalysis showed a one plus albumin, many white cells, many red cells, bacteria, etc. His hematologic findings, except for a leukocytosis, were unremarkable. BUN. was 14, which is maybe just a smidge higher than it should be. Dr. Mitchum, would you show us the x-rays?

DR. MITCHUM: This gentleman had a number of x-ray examinations which you can see by the size of the stack here. Most of them pertain to the urinary tract with a few of other types. I will illustrate with the film made during his previous admission, where we could count 1, 2, 3, 4, 5, 6 stones present in the lower ureteral segment and the anterior portion of the distal ureter. For purposes of illustration of pyelographic studies at this admission, here is a film made in 30 minutes and one made in 90 minutes. You will see then at 30 minutes there is a stone present in the proximal ureter on this side, a stone here and another here. At 90 minutes both of these proximal ureteral stones have dropped back into the collecting system and now the dilatations here suggest possibly either stones or residual edema, producing partial obstruction of the bladder orifice. This man had two examinations of the hands, looking for subperiosteal bone absorption. None was evident. He had two examinations of the

shoulder looking for superiosteal bone absorption. In the clavicle none was present. He had no films of the skull or mandible areas.

DR. STEFFEE: To go on with the case history, he had multiple catheterizations. Sometimes stones were recovered, and sometimes they just were able to bypass the stones and set up urinary drainage.

There is listed in the protocol a series of calcium and phosphorus determinations, phosphorus going as low as 1.05 and I would hate to be held strictly to that .05 instead of .06. Calcium was generally around 6.0 to 6.6. Please note that calcium is reported in mEq/L and the phosphorus is in mg.%. Repeat BUN. was again 12, sodium, potassium, chlorides, and CO<sub>2</sub> values are given. We found *Pseudomonas* in the urinary culture as well as in the draining wound in the flank. The patient became febrile, with temperatures up to 104.8 and 105, pulse 140. Subsequently to this alarming clinical development, exploratory surgery was carried out. Suppose I now ask Dr. Alys Lipscomb if she will give us the clinical discussion.

DR. LIPSCOMB: Dr. Mitchum, is there radiologic evidence of other skeletal abnormality such as osteoporosis, primary or metastatic disease?

DR. MITCHUM: There was no evidence of bone disease.

DR. LIPSCOMB: In spite of Dr. Steffee's effort to alarm me, I do not believe this patient really presents a very difficult diagnostic problem. The situation is one of multiple recurrent renal calculi in a patient with hypercalcemia and hypophosphatemia. Associated with the obstructive uropathy we see findings consistent with pyelonephritis. Neither hypertension nor anemia was reported at any time and electrolyte abnormalities were absent. Following instrumentation of the urinary tract and manipulation of the stones, the patient reacted in a stormy manner, exhibiting high fever and a tachycardia of 140. Regardless of this reaction and contrary to usual surgical practice an operation was performed.

These data are sufficient for a "probable" diagnosis. It would have been helpful, however, to have had other information which was not included in the protocol—recognizing that this may have been intentionally or



inadvertently omitted or perhaps was not available. From the standpoint of history, since the patient had had stones for at least three years, did he suffer from excessive thirst or polyuria? Had there been weakness, nausea, vomiting, or muscle cramps? What was his total serum protein, albumin, globulin, alkaline phosphatase? Was urinary excretion of calcium determined while the patient was on a controlled dietary calcium intake? If so, the reported values are elevated in one instance and borderline in the other. Since no mention of dietary preparation is made, it is best to assume there was none and exclude this from our consideration. Was a barium swallow done; if so, was a pressure defect on the esophagus observed? I would have liked especially to know what an electrocardiogram, made at the time his condition worsened with fever and tachycardia, showed.

Since it is customary to offer a differential diagnosis, we will proceed in the usual manner:

Hypervitaminosis D may produce stones and hypercalcemia. No history of vitamin D ingestion is recorded; of course, however, many patients have taken vitamin D knowingly or unknowingly on their own initiative usually because of arthritic complaints. No mention of arthritis is included here. Also hyperphosphatemia occurs with vitamin D intoxication and this patient demonstrated a low serum phosphorus.

Multiple myeloma may produce hypercalcemia but also the serum inorganic phosphorus is usually either normal or elevated. Dr. Mitchum has assured us there are no roentgenologically demonstrable skeletal lesions. No record of protein studies or bone marrow examination occurs in the protocol. Anemia, azotemia characterize myelomatosis and are absent in this case. By the time an elevated serum calcium appears with a myeloma kidney, BUN. elevation should be present.

Renal failure with secondary hyperparathyroidism may be eliminated by many of these same observations. Actually in the case of renal failure one rarely sees hypercalcemia; ordinarily the findings are hypocalcemia with hyperphosphatemia.

Malignant disease of bone or metastatic to bone is a significant consideration. Serum

calcium may be normal or elevated in either case but usually phosphorus and alkaline phosphatase are normal, remembering that no apparent involvement of bone need be demonstrable. Osteogenic sarcoma is an exception; however, here the patient complains of bone pain and x-ray findings are usually suggestive or pathognomonic and the diagnosis may not be difficult.

Milk alkali syndrome, I believe we can exclude rather promptly because no history has been noted to suggest such an entity. We do not, as I mentioned earlier, know what may have been omitted from the protocol. This syndrome may occur in a patient who develops alkalosis subsequent to ingestion of excessive alkali and milk in the treatment of peptic ulcer. The increased incidence of peptic ulcer in hyperparathyroidism sometimes makes it difficult to differentiate milk alkali syndrome. All the findings of hyperparathyroidism may be present in the milk alkali syndrome except that in the latter an elevated  $\text{CO}_2$  combining power and no increase in urinary calcium excretion (both of which may not obtain in this case) occur.

Sarcoidosis may be accompanied by hypercalcemia. Here we have nothing else to suggest such a diagnosis. I might mention here "for future reference" that most conditions, other than hyperparathyroidism, will show a diminution in serum calcium if an adrenal cortical steroid such as cortisone is administered. Usually but not invariably, no fall in blood calcium occurs in the patient with hyperparathyroidism if cortisone is given.

Of course, other causes of hypercalcemia exist—hyperthyroidism, idiopathic hypercalciuria, etc. but there appears to be no need for prolonging the discussion of differential diagnosis further since obviously these do not apply in the case under consideration.

I believe the best "basic" diagnosis we can make from the available evidence is hyperparathyroidism ("a disease of stones, bones, abdominal groans and psychic moans"—Mieher, W. C., Thibaudeau, Yvan and Frame, Boy: Primary Hyperparathyroidism. *Arch. Int. Med.* 107:361, 1961.)

We must go further, however, and consider what happened to this man between

the eleventh and fourteenth days of his hospitalization. It is my opinion that he began to approach the toxic state we used to designate as hyperhyperparathyroidism or parathyroid poisoning with, in his case the chief manifestation in the cardiovascular area although the serum calcium is not as high as is usually observed there. Reasons for this will be developed.

You remember, I am sure, from your teachings in physiology in medical school that intravenous administration of excessive calcium salts may produce cardiac standstill in systole. Therefore, calcium in high concentration in the blood has a distinct effect on musculature in general and on the myocardium in particular. I have encountered a similar patient in the past, a young man who died in acute left ventricular failure as a result of what I interpreted to be a similar set of circumstances.

Now I believe an electrocardiogram was indicated at this stage in the patient's problem to determine whether the myocardium was reflecting hypercalcemia. Usual electrocardiographic findings with elevated serum calcium levels are bradycardia (although tachycardia and a picture of myocardial ischemia may be seen); depressed T waves, prolonged P-R interval; shortening of the QT interval; rounding of the P wave. Serum calcium levels were distinctly elevated and serum phosphorus levels clearly below normal on repeated occasions as tabulated in the protocol.

Nausea, vomiting, muscle weakness, abdominal pains, disorientation, even psychic phenomena, and azotemia may be other features of hyperhyperparathyroidism.

Recently another term has been applied to this set of circumstances and has been received with enthusiasm; namely "hypercalcemic crisis" (Thomas, W. C., Jr., John G. Wiswell, T. B. Connor, and J. E. Howard: Hypercalcemic Crisis Due to Hyperparathyroidism. *Am. J. Med.* 24:229, 1958.) It has been pointed out that, unless drastic therapeutic steps are undertaken, the crisis may terminate fatally.

A possible "medical" therapeutic approach is the intravenous administration of ethylene diamine tetraacetic acid (EDTA). But this material used intravenously exerts an effect for relatively short periods of time

and also is nephrotoxic. Possible kidney damage is, of course, undesirable particularly when the patient already is suffering from obstructive uropathy and pyelonephritis as is the case here. It appears to me therefore that the physicians who were handling this problem were apprehensive about using EDTA in the face of a possible hypercalcemic crisis. It seems they elected, even though it ordinarily would not have been done in such a severely ill individual, to explore the neck for possible parathyroid adenoma. (Adenoma is the finding in 80% of patients with clinical findings of hyperparathyroidism.) Such a decision has proved life-saving in many instances and operation is advocated as definitive therapy in a patient who otherwise is a very poor surgical risk for this reason.

The conclusion I have reached is hyperparathyroidism, probably due to a parathyroid adenoma, with possible impending or actual hypercalcemic crisis. The subsequent course of the patient after surgery would be helpful in suggesting validity of reasoning in regard to the latter qualification.

DR. STEFFEE: We will now call for discussion from the floor. Are there any comments or questions?

DR. MITCHUM: Barium swallow study of the esophagus was negative.

DR. STEFFEE: Was that during the present admission? It was.

I would like to ask Dr. Lipscomb what are the metabolic effects of low serum phosphorus? Do we have to worry about this? Do you give the patient phosphorus?

DR. LIPSCOMB: To answer this question requires a brief discussion of the action of parathyroid hormones. (Incidentally this hormone has recently been isolated in pure form. Rasmussen, H. and Craig, L. C.: "Purification of Parathyroid Hormone by Use of Countercurrent Distribution." *J. Am. Chem. Soc.* 81:5003, 1959.) It has two major actions, *first*, to promote the rate of breakdown of bone which releases calcium into plasma and extracellular fluid; and *second*, to increase phosphate excretion in the urine which may occur either by decreasing proximal tubular reabsorption or increasing distal tubular secretion.

The relationship between calcium levels



and activity of the parathyroid gland illustrates the well known endocrinologic principle of a "feed-back" mechanism. Rising levels of serum calcium inhibit release of the parathyroid hormone and there is, as a result, less dissolution of bone and calcium liberation and serum calcium falls toward normal. The opposite set of circumstances occurs when serum calcium level falls. With bone resorption and liberation of calcium, significant phosphate is simultaneously released and urinary loss of the excess phosphorus follows, maintaining the normal serum phosphate level.

It follows then the crux of regulation of phosphate levels is maintenance of calcium levels and that serum phosphate levels follow serum calcium levels like a dog's tail follows the dog.

Phosphate is probably the most important anion of the body and functions in formation of bones and teeth; of organic phosphates such as nucleic acids, phospho-lipids, hexose phosphates, etc. ATP for example is necessary for conversion of energy from metabolic processes to energy for such metabolic functions as contraction of muscles. One of the systems of the body which regulates hydrogen ion concentration is the phosphate buffer system. Regulation of the urine pH depends in large part on phosphate buffering.

Most of the control of phosphate levels in the body depends upon parathyroid hormone control of renal tubular function.

Now to try to answer Dr. Steffee's first question. Effects of low serum phosphate—one may see excessive excretion of phosphate as a result of secondary hyperparathyroidism due to a renal tubular lesion produce renal or "vitamin D-resistant" rickets—or Fanconi's syndrome.

As to whether we should concern ourselves about such an observation—yes—we should and correct any correctable situation which produces it—such as hyperparathyroidism, as is the case here. When correction is carried out the serum calcium falls and the kidneys conserve phosphate and homeostasis is effected.

I have never read of or thought it necessary personally to administer phosphate in primary hyperparathyroidism to help correct the low phosphate level. The nub of

this problem in the absence of renal tubular disease, as I have said, is to remove the overproduction of parathyroid hormone and excessive phosphate loss will stop and serum phosphate will return to normal.

Parenthetically I might add that observations of tubular phosphate reabsorption (TRP), phosphate clearance, phosphate Tm and phosphate creatinine ratio have all been proposed as added laboratory procedures to assist in the diagnosis of hyperparathyroidism. None of these has received universal acceptance and I have had no experience with any.

DR. STEFFEE: Are there any other questions?

I thought it would be unique, shall I say, to present a case other than autopsy. And also a case that is fairly obvious, and I don't detract from your discussion when I say that, Dr. Lipscomb, but one of the rather moderately unusual diseases in order that we could get a good refresher course on the biochemistry and the problems that may arise therefrom.

The specimen we received was a pale brown homogeneous mass, measuring 1.6 by 1.2 by 0.8 cm. If we wish to compare this to "the size of an egg," it would be almost twice the size of an egg of a humming bird. Microscopically, the cell nuclei were quite uniform throughout, without anaplasia or pleomorphism. In some areas the cytoplasm was foamy, and the cell border distinct; in other areas the cytoplasm was compact, with blurring of the cell outline. This is, then a parathyroid adenoma.

John Ramsdale, D. M. Black, L. B. Woolner, and F. R. Keating (Surg., Gynec., & Obst., 111:451, 1960) report 20 parathyroid adenomas and one instance of parathyroid hyperplasia encountered by chance during thyroidectomy between the years of 1947 and 1958. Determinations of serum calcium and phosphorus suggested that hyperparathyroidism was probably absent in seven cases, probably present in eight and equivocal in six. In the Medical Clinics of North America (44:1627), J. E. Clark suggests the value of the phosphate clearance test:

$$100 + 1 - \frac{(\text{urine phosphate} \times \text{serum creatinine})}{(\text{urine creatinine} \times \text{serum phosphate})}$$

An excellent review of the physiology of

hyperparathyroidism has been presented by J. J. Farrell, in the *American Surgeon* (25: 16, 1959). He notes the wide diversity of symptomatology of hyperparathyroidism. He also suggests the phosphorus reabsorption index as outlined above and states that the minimal adult value ranges between 0.88 and 0.96. Incidentally, the various chemical levels are all reported in milligrams % for this calculation. In the Amer-

ican *Journal of Surgery* (99:394), Oliver Polk discusses the diagnosis and management of hyperparathyroidism. His paper is based on 230 cases at the Massachusetts General Hospital between the years of 1930 and 1959. In this series 79.5% were attributable to a single adenoma, 4% to double adenoma, 4% carcinoma, 6.5% to clear cell hyperplasia and 6% to chief cell hyperplasia.

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**The Mechanism of the Increased Venous Pressure with Exercise in Congestive Heart Failure. J. Edwin Wood, J. Clin. Invest. 41:2021, 1962.**

Muscular exercise has long been known to be an important factor in precipitating signs and symptoms of congestive heart failure. The mechanisms by which exercise causes such manifestations remain questionable to the physician and physiologist. The author has examined the role of venomotor tone upon peripheral venous pressure at rest and in mild exercise in normal subjects and patients with congestive heart failure. Forearm venous distensibility was measured by plethysmography during leg exercise with and without arterial occlusion of the exercising legs.

Demonstration of a forearm venoconstriction in patients with congestive heart failure, which was blocked by a sympathetic ganglioplegic agent, leads the author to the conclusion that excessive venous pressure during exercise is primarily a result of venous constriction. In his opinion the results of the studies contradict the explanation that venous pressure increases in exercise result from an increased flow of blood into the venous system which cannot be removed by a hand-capped pump. (Abstracted for the Middle Tennessee Heart Association by Lloyd H. Ramsey, M.D., Nashville, Tenn.)



# President's Page



WILLIAM J. SHERIDAN,  
M.D.

As this yuletide season approaches, one pauses to assess moral values and to give perspective consideration to the underlying force which brings to the surface those wholesome qualities of human kindness, understanding, forgiveness, charity and a spirit of good will toward men which admirably prevails throughout this glorious season. At this time, life seems to shed the dull raiment of the overcast day and bring forth our inherent better qualities in their true light, and in a manner reminiscent of the transformation of the bleak winter landscape when suddenly it is bathed in warm golden mellowness by the rays of winter sunshine as they quietly but forcefully emerge through rents between broken clouds.

The sterling qualities of sincere humanism which often burst forth from their cocoon are certainly not the result of inherent biologic processes; they are ingrained dominant characteristics which, are often masked and are not at all times apparent. We know that they originated 1962 years ago when in a manger in Bethlehem there was born the *One* whose teachings have more profoundly affected civilization than those of any other being on earth. By *His* precepts we are endowed with the sense of human values, of understanding, kindness, sympathy, generosity and the myriad qualities that are so essential to keep our profession on the highly elevated plane that it rightfully deserves.

If we as individuals will but follow the teachings of the *Master*, the Greatest Physician; if those at the helm of our government will do likewise; if the nations of the earth would but do the same, we would be able to live in harmony and would not be forever harassed by the overhanging clouds of unrest and war.

However, regardless of present world-wide tension and unrest there is a profound feeling of well-being and joy as the yule season approaches.

Your President wishes for you and yours a very Merry Christmas and a Happy and Prosperous New Year.



*William J. Sheridan, M. D.*  
President

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DECEMBER, 1962

## EDITORIAL

### POSTOPERATIVE ELECTROCARDIOGRAMS

Cardiovascular complications after surgical procedures are not too common but may be very significant and important. Older patients with a high degree of cerebral arteriosclerosis may develop hemiplegia. This complication often proves to be a terminal event. It is particularly likely to occur if hypotension occurs during the surgical procedure or in the postoperative period. Patients who have had coronary thrombosis as long as one year before the surgical procedure are ordinarily good operative risks. However, others may develop coronary thrombosis while under anaesthesia during which time they naturally are unable to acquaint their medical and surgical attendants with the symptoms which so often signal the occurrence of a coronary thrombosis.

Over a two year period, 1000 patients

were examined during the postoperative time in the recovery room of a large New York Hospital.<sup>1</sup> These patients were selected because each had at least one of four conditions: (1) an arrhythmia, (2) bradycardia of 60 per minute or less, (3) tachycardia of 120 or greater, (4) a known history of heart disease, hypotension, respiratory difficulties, or massive blood replacement.

Among the 1000 cases were 11 instances of myocardial infarction. These were all atypical cases of coronary thrombosis detected solely by the performance of a routine electrocardiogram. Most of the patients who had a pulse rate of less than 60 or of more than 120 after 24 hours, had actual organic heart disease.

Because of these findings in this selected group, the question was raised as to whether or not a routine electrocardiogram should be done on every postoperative patient. In an attempt to answer this question a routine postoperative electrocardiogram was obtained on 782 consecutive patients.<sup>2</sup> Of this group 321 patients (41%) had completely normal postoperative electrocardiograms. Ninety-nine (8%) showed various types of arrhythmia, as ventricular premature contractions (30), bundle branch block (23), delayed intraventricular conduction (13), and auricular fibrillation (5). Thirty-one patients had tachycardia, due usually to hypovolemia or respiratory complications. Among 151 patients with postoperative tachycardia, 117 (77%) had obvious and serious reasons for the increased heart rate. Among the patients with bradycardia, 63% had pathologic lesions located either in the breast or perineum. In the entire group of 782, 271 or 35% had abnormal electrocardiograms.

After comparing the results of the two series it seems evident that nothing was gained by the routine employment of postoperative electrocardiograms, as compared to the selective use of this diagnostic procedure in the 4 categories of patients surveyed in the first group.

A. W.

### References

1. Schweitzer, O., and Howland, W. S.: The Value of the Electrocardiogram in the Immediate Post-operative Period, *Surg. Gynec. & Obst.* 113: 33, 1961.



2. Howland, W. S., Schweitzer, O., and LaDue, J. S.: Evaluation of Routine Post-operative Electrocardiography. *New York J. Med.* 62:1941, 1962.



## IMPACT

A couple of months ago one of the Nashville papers attacked the stand of a prominent surgeon of this city on an item of politics, and presented the whole matter in a plainly dishonest manner. Some days later, however, the paper published the doctor's answer in the column—Letters to the Editor—under the title, *Physicians Are Also Citizens*. The letter outlined so well the responsibility of the medical profession in politics—a responsibility which is not selfish but touches the welfare of every citizen and the country as a whole. Certain thoughts expressed in the letter deserve to be quoted.

"Doctors are by nature reluctant to enter the political arena. We have been driven to do so, however, by some politicians and some newspapers who attempted, in our opinion, to exploit the medical needs of the aged. . . .

"We would be remiss if we failed to vigorously oppose any legislation which would hamper the continued progress of medical science. We doctors believe that if any legislation is enacted affecting our profession, such legislation should be for the benefit of all our people, of all ages and in all economic levels. . . .

"The economic costs of discriminatory social legislation would place an added burden upon virtually every wage earner in America. More appalling than this, however, is the fact that *Medicare* does not solve a problem but might delay the evolution of a more satisfactory plan.

"Doctors are citizens. They have as much right to be concerned with legislation they believe to be adverse to the public interest as does a newspaper which opposes any abridgement of freedom of the press. . . .

"Medical science in the United States has advanced far beyond the general medical achievements anywhere else in the world. It has achieved this in an atmosphere free from undue political intervention and bureaucratic control. For the good of all our citizens, we believe this atmosphere must be preserved. When legislation has genuine merit, the medical profession will support it." . . .

That we are living in an era of a socialistic philosophy cannot be denied. Aging civilizations and bodies politic seek security as do aging individuals. Recognizing this socialistic movement, the medical profession, as was so well put by the Nashville surgeon, must look to the health and good of all the Nation's people. And much as doctors drag

their feet, they "*are also citizens.*" Most physicians drag their feet because they enjoy taking care of sick folks rather than joining in political moves, and hope that "bad dreams will just go away" if nothing is done about them.

However, the minority of doctors and its leaders have recognized the facts that the philosophy of socialism will not 'just go away.' Those giving momentum to the socialistic philosophy are militant. It is from such groups that we must learn and have learned. The *Independent Medicine's Political Action Committee—Tennessee* (IMPACT), is a leaf taken from the book of organized labor. Labor's counterpart to IMPACT is the *AFL-CIO Committee on Political Education* (COPE). Though both of these Committees have political aims, there are major differences. A union man involuntarily contributes money through his dues deducted from his wages, through the "check-off" system. Any contributions made by doctors to IMPACT will be voluntary.

IMPACT is organized as a committee of physicians outside of so-called organized medicine. It is not related to the latter nor is it affiliated with any political party. Its purposes are stated as follow:

- (1) To promote and strive for the improvement of government by encouraging and stimulating physicians and others to take a more active and effective part in governmental affairs.
- (2) To encourage physicians and others to understand the nature and actions of their government, as to important political issues, and as to the records of office holders and candidates for elective office.
- (3) To assist physicians and others in organizing themselves for more effective political action and in carrying out their civic responsibilities.
- (4) To do any and all things necessary or desirable for the attainment of the purposes stated above.

A Board of Directors of 10 persons, one from each of the 9 Congressional Districts of the State, a tenth representative of the Woman's Auxiliary, representing both political parties, will set policies, and carry on the activities of the Committee. These policies and activities are openly admitted to be of a political nature and for the purposes outlined above—to remind doctors constantly that we are living not in a "bad dream which will go away," but that we

face in dead earnest political moves which we believe can result only in a lowering of the levels of medical care and at a cost of near bankruptcy, and if not this, at the cost of unmerciful taxation—either direct or in payroll deductions.

To go back to the Nashville surgeon's letter—"Doctors are by nature reluctant to enter the political arena. We have been driven to do so, . . ." Let us face it! And facing it as citizens, join IMPACT when the call comes—your patients and those of the future deserve its support.

R. H. K.



#### A.M.A.-E.R.F.

It is again time to think of deductions for income tax purposes. The AMA-ERF Loan Guarantee Fund available through bank loans offers financial assistance to medical students, interns, and residents. Some months ago The A.M.A. reported that early this year letters went to 245,762 physicians asking contributions. Of these 9,826 responded with a total contribution of \$178,000. (No doubt more physicians have contributed since the date of that report.) Won't you take this opportunity to make your contribution before December 31?

### Special Item

#### Have You a Taxpayer-Identifying Number?

Highlights of the Regulations Requiring Taxpayer-Account Numbers as Prepared by the Legal Department of the American Medical Association

Under authority contained in Public Law 87-397 (Oct. 5, 1961), relating to taxpayer-identifying numbers necessitated by the installation of the automatic data processing system by the Internal Revenue Service, the Commissioner of Internal Revenue, on August 24, 1962, adopted regulations requiring taxpayers and payers of income to obtain and use identifying numbers. The regulations term the number prescribed for use by an individual an "account number." Since 140 million Americans already have Social Security numbers, it was decided to use these numbers to avoid the inconvenience of obtaining other numbers. Thus, the account number which an individual will

indicate on a return or other related document will also be his Social Security number.

Unless a physician is or was ever an "employee," it is unlikely that he will have a Social Security number since doctors of medicine who are self-employed are excluded from coverage under the Social Security system. However, since *every* person required to make a return, statement, or other document for any period commencing after 1961 with respect to his tax liability, must have an account number, physicians will have to obtain such numbers even though they are not covered under the Social Security system.

According to the regulations, application forms for use in obtaining account numbers will as far as possible be furnished *without* request during 1962 to taxpayers needing numbers. Thus, a taxpayer is not required to file an application for an account number during 1962 *unless* furnished with an application. A taxpayer who has been supplied with an application form *must* file it in accordance with the instructions for such form. *After* 1962, an individual needing an account number *must* file an application for an account number on either Form SS-5 or Form 3227. An application form may be obtained from any District Director, or any District Office of the Social Security Administration.

An individual engaged in a trade or business is also required to obtain an identifying number which is termed an "employer identification number." For this (and our) purpose, an individual is considered to be engaged in a trade or business if any return is required to be filed by him as an employer (other than a household employer) with respect to his liability for the Social Security taxes imposed under the Federal Insurance Contributions Act and the provisions of the Internal Revenue Code which require an employer to withhold income taxes from the wages of employees. Thus, such an individual may not only have an account number but an employer identification number. And, under the regulations he is required not only to include his account number in the appropriate return, statement or other document but also to include his employer identification number



in the schedule provided for reflecting profit or loss from a business or profession.

Obviously, a physician-employer is required to obtain an employer identification number if he doesn't already have one. This is unlikely if he has been an employer for some time. If a number has not been assigned then application therefor must be made on Form SS-4 to any District Director or any District Office of the Social Security Administration office. Referring to the requirement as to the inclusion of account numbers and employer identification numbers, a physician employer would have to include his account number on his income tax return (or declaration of estimated income tax) and his employer identification number on Schedule C of Form 1040 (Profit [or Loss] from Business or Profession).

An income tax return or a declaration of estimated income tax filed jointly by a husband and wife need include only the account number of the husband. However, a wife's account number must also be shown if, for the taxable year covered by the return or declaration, the wife has (a) separate gross income of \$600 or more, or \$1,200 or more if she has attained the age of 65 before the close of the taxable year, (b) self-employment income, or (c) income (such as wages, dividends, or interest) paid to her otherwise than with her husband which the payer thereof is required to report on a return or statement of information.

The law and regulations impose a penalty for failure to include the identifying number in any return, statement, or other document, or when otherwise required. The penalty is \$5 for each such failure.

## DEATHS

**Dr. Norman G. Patterson**, 58, Bristol, died on October 30th at his home.

**Dr. Robert Boone Scott**, 52, Lake City, died on October 16th at his home. Dr. Scott was Mayor of Lake City.

**Dr. Pope McGehee Farrington**, 89, Memphis, died October 16th at Baptist Hospital. Dr. Farrington helped found the Memphis Speech and Hearing Center.

**Dr. John W. Ross**, 78, Clarksville, died October 21st at the Queen City Nursing Home.

**Dr. Louis A. Edmundson**, 71, Bethel, died October 30th at a hospital in Athens, Alabama.

## PROGRAMS AND NEWS OF MEDICAL SOCIETIES

### Nashville Academy of Medicine and Davidson County Medical Society

The society held its combined quarterly medical meeting on the evening of November 14th in the Hermitage Hotel. Hospital staff meetings, a dinner, and a business session of the Academy preceded the scientific meeting. The program consisted of the following:

"The Classification and Management of Pulmonary Granulomatoses" was presented by Dr. Howard S. Van Ordstrand, head of the Department of Pulmonary Diseases, Cleveland Clinic, Cleveland, Ohio. Dr. Van Ordstrand is a Regent and Executive Council Member of the American College of Chest Physicians.

"Palliative Measures in Female Patients with Pelvic Malignancy" was the subject presented by Dr. Robert A. Ross, chairman of the Ob-Gyn Department, University of North Carolina School of Medicine. Dr. Ross is chief of Ob-Gyn Service, North Carolina Memorial Hospital and past-president of the American Association of Obstetricians and Gynecologists.

"Recent Advances in Pediatric Surgery" was the subject presented by Dr. Robert E. Gross, surgeon-in-chief, Boston Children's Hospital. Dr. Gross is Ladd Professor of Children's Surgery, Harvard Medical School and Senior Surgeon at Peter Bent Brigham Hospital.

### Knoxville Academy of Medicine

The Academy held its regular monthly meeting on November 13th in the auditorium of the Academy of Medicine Building. The scientific program was presented by Dr. James Callaway, Nashville, a member of the chest clinic of Vanderbilt University School of Medicine. His subject was "Management of Pulmonary Emphysema."

### Chattanooga-Hamilton County Medical Society

The monthly meeting of the Society was held in the auditorium of the Interstate

Building. The scientific program consisted of the following: "Complications of Biliary Tract Surgery," by Dr. Guy K. Terrell; and "Blood Usage in a Community Hospital" by Dr. Bruce A. Elrod. An interesting case report was presented by Dr. Robert C. Robertson.

On October 30th, topics related to both the legal and medical professions were presented at a special joint meeting of members of the Chattanooga Bar Association and the Chattanooga-Hamilton County Medical Society. The meeting was held in the Interstate Building Auditorium. Physicians participating in the discussions were: Dr. Robert A. Waters and Dr. Houston Price. Attorneys on the program included: Mr. Josiah Baker, Mr. Raymond Graham and Mr. Don Halladay.

### Memphis-Shelby County Medical Society

The Society held its monthly scientific meeting in the Pathology Auditorium of the University of Tennessee College of Medicine on November 6th. The scientific program consisted of the following: "Derabrasions" by Dr. Donald M. Anishanslin; and "New Syndrome: Autoerythrocyte Sensitization" by Dr. Gerald I. Plitman. A business session followed the scientific program.

## NATIONAL NEWS

### The Month in Washington (From the Washington Office, AMA)

A Public Health Service study of possible links between cigarette smoking and lung cancer got underway with appointment of a 10-member advisory committee including eight physicians from the academic field.

Dr. Luther L. Terry, Surgeon General of the PHS and chairman of the committee, said he selected the 10 members on the basis of geographic distribution and balance among professional disciplines, scientific objectivity, competence in special fields of interest, ability to think broadly outside of one particular field of interest, and ability to critically analyze a point of view.

In addition to being a committee member, Dr. Stanhope Bayne-Jones also is serving

as a special consultant to the committee staff. He is a former dean of the Yale School of Medicine and a former president of the American Society of Pathology and Bacteriology.

"This committee is not merely an aggregate of ten men," the Surgeon General said. "It is a composition of specialists covering the broad range of medical sciences involved in evaluating the complex relationship between tobacco smoking and health. I expect the committee to be a dynamic, productive and creative group that will shed light on these complex questions."

The committee members were selected from a list of approximately 150 names submitted by Federal agencies, voluntary health organizations and the tobacco industry.

In the first phase of its activity, the committee is making a comprehensive review of all available data on smoking and other factors in the environment that may affect health. It is expected that this review will be completed by next summer.

The second phase of the study will concern recommendations for action. No decision on how the second phase is to be conducted will be made until the first phase has been completed.

Soon after appointment of the committee, the National Cancer Institute under PHS issued a new booklet "Cancer Cause and Prevention" which referred to the conclusion reached by the PHS in 1959 that smoking is the principal reason for the steep rise in lung cancer cases.

The booklet discusses cancer as a preventable disease. It describes environmental and personal factors involved in the causation of cancer, and occupational cancer hazards that to some extent may be avoided. It goes into the problems of air pollution, radiation exposure, and food additives.

The booklet points out that as the older age group in the population increases, more people are living long enough to develop cancer induced by exposure to a causative agent earlier in life. Such cancers may take as long as 40 years to appear, it says.

"Thus," the publication concludes, "mortality from malignant disease in the future



can be reduced by continuous identification and eradication of cancer hazards.

★

The Food and Drug Administration was criticized as to both policies and operation by a Citizens Advisory Committee and some members of Congress.

A special advisory committee—appointed by the Secretary of Health, Education and Welfare and headed by Dr. George Y. Harvey, a political science lecturer at the University of Missouri—said the FDA had fallen short in carrying out its responsibility of protecting the American public against unsafe drugs, therapeutic devices and foods.

The FDA came in for even sharper criticism from Sen. Hubert H. Humphrey (D., Minn.) who indicated his Senate Government Operations Sub-Committee would hold hearings in December on the agency. He charged the FDA lacks the ability and competence to carry out the new drug law effectively.

He accused the agency of failure to keep in touch with other government health projects and outside experts.

"Drugs have been approved which FDA now admits should never have been approved," Humphrey said. "Drugs have been kept on the market long after FDA admits they should have been eliminated from the market."

The 16 doctors, educators, businessmen and consumers on the advisory committee reported to HEW Secretary Anthony J. Celebrezze after a year-long study of FDA programs and procedures.

Making 10 major recommendations for overhauling FDA's approach to consumer protection, the panel said the federal agency had been relying on "after-the-fact enforcement" of regulations rather than taking more preventive action.

Celebrezze promised that the report would get a "most careful analysis." He said steps already were being taken to assure the public adequate protection through administrative action and under the new drug safety law recently passed by Congress.

"Although inspection and punitive action are vitally necessary," the Committee said, "the time has arrived for a more construc-

tive approach. After-the-fact enforcement is not always good consumer protection. Other approaches along preventive lines should be developed."

## MEDICAL NEWS IN TENNESSEE

### Tennessee Academy of General Practice

More than 200 family physicians from throughout Tennessee and surrounding states attended the 14th Annual Scientific Assembly of the Tennessee Academy of General Practice in Nashville, October 24-26. Among the outstanding guest speakers were: Dr. Matthew Marshall, Jr., Pittsburgh, clinical instructor in urology at the University of Pittsburgh School of Medicine; Dr. Thomas J. Ormsby, Director of the pulmonary physiology laboratory of St. Michael's Hospital, Newark, New Jersey; and Dr. Celso-Ramon Garcia, Boston, instructor in obstetrics and gynecology at Harvard Medical School.

Forty-two scientific and technical exhibits enhanced the scope of this meeting.

### Memphis Surgical Society

Dr. Eugene M. Bricker, associate clinical professor of surgery at Washington University, St. Louis, was the speaker at the meeting on October 24th. His topic was, "Practical Application of Urinary Diversion in General Surgery Practice."

### American Association of Blood Banks

The Association held its 15th annual meeting October 31-November 3, at the Peabody Hotel in Memphis. Dr. William B. Walsh, Washington, D. C., gave the keynote address. He was one of the 400 guests who have made significant contributions to medicine.

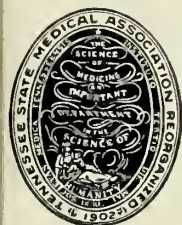
Other guests included Dr. Florence B. Seibert, emeritus professor of biochemistry at the University of Pennsylvania; Dr. William C. Boyd of Belmont, Massachusetts, scientist, teacher and author; and Dr. Robert A. Nelson, Jr., research professor of medicine at University of Miami Medical School.

A large attendance of persons from throughout the United States attended the meeting.

**T**he time is now to begin planning for the ANNUAL MEETING of the Tennessee State Medical Association in Knoxville—April 7-10, 1963. If you are interested in—

**S**cientific programs, then plan to be in Knoxville next April for timely discussions on the advances in Medicine.

**M**ake April 7-10 the time to find out what your State Medical Association is doing and how you can render effective support in the months ahead.



**A**ll TSMA members are invited to attend.

**N**otable speakers in

**E**very field offering a

**W**ealth of up-to-date information  
IN MEDICINE.

**S**ixteen Specialty societies will conduct their business and scientific meetings concurrently with the meeting of TSMA.



## Medical Symposium on Infectious Diseases Conducted in Knoxville

A medical symposium of infectious diseases, sponsored by the Knoxville Academy of Medicine and the Tennessee Valley Academy of General Practice, was held on November 15th at the Andrew Johnson Hotel.

The symposium featured discussions by experts in their fields on the latest developments in medical knowledge pertaining to diseases ranging from hepatitis to the pneumonias.

Congressman Howard H. Baker was the luncheon speaker. His subject was "The Medical Profession and the Congress."

Among the guest speakers were: Dr. Thomas M. Durant, professor and chairman of the Department of Medicine, Temple University School of Medicine, Philadelphia; Dr. John Davis Hughes, assistant professor of medicine, University of Tennessee College of Medicine, Memphis; Dr. John H. Hall, associate professor of surgery, Temple University School of Medicine and chairman of the Department of Surgery, Philadelphia General Hospital, Philadelphia; Dr. Hattie E. Alexander, professor of pediatrics, College of Physicians and Surgeons, Columbia University; Dr. Alfred S. Evans, professor and chairman, Department of Preventive Medicine, University of Wisconsin School of Medicine; and Dr. William M. Covode, associate professor of urology, Colorado University School of Medicine, Denver.

## New Medical Specialty Society Organized in Tennessee

The Tennessee Industrial Medical Association has been recently organized with Dr. T. A. Lincoln, medical director of the Oak Ridge National Laboratory, serving as president. Dr. G. F. Zanolli, assistant medical director of the ORNL health division was elected to the office of secretary.

The new organization is an official component society of the Industrial Medical Association, consisting of some 4,000 physicians who combine their knowledge and experience to develop and encourage the highest possible standards in the practice of occupational medicine.

The new society will attempt to promote

interest in occupational medicine in Tennessee industries, particularly in manufacturing plants. A special effort will be made to improve communication on occupational health matters between full-time professionals in this field and representatives of management and labor, as well as physicians in other branches of medicine.

## How to Save Life in Disaster Being Taught

The Tennessee Department of Public Health is offering a medical self-help training program which contains information on how to preserve life in case of disaster. The key figure is the practicing physician, who will teach the course to others.

The program has two parts: "Family Guide—Emergency Health Care" which contains instructions for the family on survival and emergency health care if a physician or organized health services are not available. Part 2 includes radioactive fallout and shelter; hygiene, sanitation and vermin control; shock, bleeding and bandaging; artificial respiration; fractures and splints; transporting injured; burns; nursing care; infant and child care; emergency childbirth; water and food.

Additional information may be obtained from the director of health mobilization, State Department of Public Health, Room 242, Cordell Hull Building, Nashville 3, Tennessee.

## West Tennessee Cardiac Day

Latest information on causes, treatment and diagnostic techniques of cardiovascular diseases were outlined to West Tennessee physicians at Jackson on November 8th, in the third annual Cardiac Day program.

Dr. John Ochsner, Jr., cardiovascular surgeon of the Ochsner Clinic, New Orleans, was the principal speaker at the meeting held at the New Southern Hotel. His topic was "Present Status of Cardiovascular Surgery." More than 100 physicians of the area attended the session.

## New Gibson County General Hospital Opened

The new hospital in Trenton held open house on October 28th at the time the 30-bed facility was dedicated. Opening of the hospital will fill a long recognized need in the area.

Dr. John W. Ellis, Dyer, is director of the medical staff, which includes Drs. Edward C. Barker, William O. Murray, James W. Hall, anesthesiologist, Eugene C. Crafton, James I. Elliott, and William M. Phillips, chief of surgery. The new facility is fire-proof and has been constructed in the most modern manner.

### Fall Festival for Mature Living

The Governor's East Tennessee Conference of Aging was conducted in the Patten Hotel in Chattanooga on October 18th. The title of the conference was "Fall Festival for Mature Living."

In addition to outstanding speakers, the principal address was made by Dr. Edward Bortz, Philadelphia, senior consultant of Lankenau Hospital, who spoke on the subject, "The Delights and Follies of Aging."

### University of Tennessee College of Medicine

Dr. Michael J. Sweeney, associate professor of pediatrics, has designed a lung-kidney machine to save some of the thousands of premature babies who die each year. Authorities agree that the machine, if perfected, will be a great advance in its field since the heart-lung machine.

★

Over \$2 million was spent on research activities by the University of Tennessee Medical Units during the year ended June 30. \$1,078,653 was spent by the College of Medicine staff members, \$1,114,894 by the School of Basic Medical Sciences, \$92,318 by the College of Pharmacy and \$6,878 by the College of Dentistry.

Awards and contracts from federal sources accounted for \$1,877,789; city, county and state appropriations, contracts and grants accounted for \$41,159; industry gave \$145,929; foundations gave \$56,256 and voluntary health organizations \$55,809. Contributions from individuals and other sources was \$115,800.

★

Memphis Medical Units had an enrollment of 1481, about the same as last year. These figures were the tally at the end of the last fall quarter.

★

Dr. Amos I. Chernoff, specialist in the

study of blood diseases, has received a \$97,750 grant to further his studies in that field. The grant was made by the National Institutes of Health. Dr. Chernoff is studying abnormal hemoglobins, which are responsible for some hereditary anemias in humans.

★

Recent additions to the staff are Drs. Teresa Silverman and M. Orhan Ozturk, as instructors in psychiatry; Dr. Kenneth J. Munden, assistant professor, and Dr. Ewin S. Chappell, as associate professor in psychiatry; Dr. E. William Rosenberg, assistant professor in dermatology; Dr. Ralph R. Reed, instructor in medicine; Dr. Richard E. Travis, instructor in medicine; Dr. Thomas Maguda, instructor in otolaryngology; Dr. Luis Bueno, psychologist, as assistant professor in psychiatry. Dr. Alexander A. Fedinec has joined the Department of Anatomy as an assistant professor.

## PERSONAL NEWS

**Dr. William B. Wadlington**, Donelson, was the speaker at the October meeting of Hickman Elementary School Parent-Teacher Association.

**Dr. Donald Pinkel**, Memphis, was the speaker at a recent meeting of the Exchange Club.

**Dr. Richard O. Cannon**, Nashville, presided at a meeting of the Teaching Hospital Section of the Association of American Medical Colleges at a recent meeting in Los Angeles.

**Dr. William Hall**, Clarksville, was a recent guest speaker before the Tennessee Nurses Association, District 13. His subject was "The Nursing Care of Post Anesthetized Patient."

**Dr. Lorin E. Ainger**, Memphis, has been certified by the Sub-Board of Cardiology of the American Board of Pediatrics.

**Dr. H. A. Morgan, Jr.**, Lewisburg, attended the 90th Annual Meeting of the American Public Health Association at Miami Beach, Florida.

**Dr. Eugene M. Ryan**, South Pittsburg, assumed the office of President of the Tennessee Academy of General Practice, at its annual meeting. **Dr. Carson E. Taylor**, Lawrenceburg, has been named 1962-63 Vice President. Other officers of the TAGP are **Dr. T. W. Johnson**, Dyersburg, President-Elect, and **Dr. W. W. Wilson**, Old Hickory, Secretary-Treasurer. **Dr. Julian K. Welch**, Brownsville, and **Dr. J. Frank Manning**, Knoxville, have been named delegates to the American Academy of General Practice.

**Dr. Hilda Jane Walters**, formerly of Frostburg, Maryland, announces the opening of her office for the general practice of medicine in Pigeon Forge.



**Dr. W. Andrew Dale**, Nashville, has moved his office to the Mid-State Medical Center.

**Dr. William Albert Howard**, Cookeville, has been elected by the Tennessee Academy of General Practice as Tennessee's "general practitioner of the year."

**Drs. George Mann and Albert Weinstein**, Nashville physicians, and **Dr. William Fuqua** of Columbia, were special panelists on a recent TV program in Nashville on a discussion of cholesterol, diet and exercise in their relation to heart disease.

**Dr. Mildred Stahlman**, Nashville, President of the Southern Society for Pediatric Research, delivered her presidential address at a recent meeting in Gainesville, Florida.

**Dr. A. Roy Tyrer, Jr.**, Memphis, is the first physician from Memphis to serve aboard the S.S. Hope, a former combat hospital ship on a mission of international good health and good will. Dr. Tyrer was recently installed as President for 1963 of the Congress of Neurological Surgeons.

**Dr. James G. Dickson**, a North Carolina native, has assumed the duties of pathologist at the Carter County Memorial Hospital in Elizabethton. He succeeds Dr. Felix Mclat.

**Dr. Warren Henry**, Chattanooga, spoke on the subject "Medicare and Its Impact on the American People" at a meeting of the Stanley Lachman Lodge.

**Dr. Henry Lyons**, Rogersville, has been elected President of the Kiwanis Club.

**Dr. Eugene M. Regen**, Nashville, was a recent speaker before the Senior Citizens group. His subject was: "Better Walking Through Better Foot Care."

**Dr. James Robert Thurman** joined **Dr. Gilbert Varnell** and **Dr. John Rogness** at Cleveland in the practice of obstetrics and gynecology.

**Dr. Malcolm R. Lewis**, Nashville, has moved his office to the Mid-State Medical Center.

**Dr. Franklin J. Malone, Jr.**, Clarksville, has announced the opening of his office in the Runyon Building in Clarksville where he will practice urology.

**Dr. Robert L. Chalfant**, Nashville, has been named President of the Nashville Obstetrical-Gynecological Society. He succeeds **Dr. Robert Patterson**. **Dr. B. K. Hibbett, III**, was named President-Elect. The new secretary is **Dr. Paul Green** and **Dr. Charles Joe Hobdy** is the new Treasurer.

**Dr. David S. Carroll**, Memphis, professor and chairman of the Department of Radiology at the University of Tennessee College of Medicine, has been named Chairman of the Board of Chancellors of the American College of Radiology.

**Dr. Walter Hankins**, Johnson City, has been elected to the Board of Directors of the Tennessee Division of the American Cancer Society.

**Dr. James C. Hudgins, Jr.** announces the opening of his office for general practice of medicine in Lawrenceburg.

**Dr. W. J. McClure**, Nashville, announces his

association with **Dr. R. B. Wilson** for the practice of medicine in Huntingdon.

Twenty-one Tennessee surgeons are among some 1,100 from throughout the nation inducted recently as Fellows of the American College of Surgeons. Tennessee surgeons included are: **Dr. Robert W. Trotter**, Athens; **Drs. George E. Beckmann, Jr. and Jesse L. Williams, Jr.**, Chattanooga; **Dr. Frank K. Jones**, Cleveland; **Dr. Thomas K. Young, Jr.**, Columbia; **Dr. O. Fred Moore**, Dyersburg; **Dr. Felix E. Williamson, Jr.**, Jackson; **Dr. Billy N. Golden**, Kingsport; and **Dr. Thomas C. Prince, Jr.**, Knoxville; **Drs. Robert G. Allen, David F. Austin, Eddie E. Bramlitt, Thomas E. Goyer and William L. Moffatt, Jr.**, Memphis; **Dr. Ernest M. Nielsen**, Mountain Home; **Drs. Harold A. Collins, William H. Edwards and Joe M. Miller**, Nashville; **Dr. Earl Eversol, Jr.**, Oak Ridge; **Dr. Joe D. Mobley**, Paris; and **Dr. Claude C. Snoddy**, Tullahoma.

**Dr. James P. Lester**, Nashville, has opened his office in the Mid-State Medical Center for the practice of thoracic and general surgery.

**Dr. Louis Sampson**, Nashville, announced the opening of his office for the practice of psychiatry in the Mid-State Medical Center.

**Dr. Robert A. Utterback**, Memphis, professor and chairman of the Division of Neurology, is the author of a chapter in the second edition of "Clinical Neurology," published by Paul B. Hoeber, Inc.

**Dr. Lorin E. Ainger**, Memphis, assistant professor of pediatrics at U.T., has been named associate editor of Brennemann's "Practice of Pediatrics."

## BOOK REVIEW

**FRIEND OR ENEMA.** Charles F. Clark, 96 pages. Twinkle Press, Roanoke, Va., 1962.

This 96-page book will be a joy to hospital patients. It contains humorous cartoons and illustrations, including pages of puzzles, fake book covers, a course in prescription writing. It has been rightfully labeled by its author "A cornball satire about hospitals, doctors, nurses and patients."

## ANNOUNCEMENTS

### Calendar of Meetings 1962

#### State

December 13—Postgraduate Day—"Practical Gynecology and Endocrinology," Vanderbilt University School of Medicine, Nashville

#### 1963

February 12-16—Mid-South Medical Assembly, Memphis

**Regional**

December 13—Symposium of the Diabetes Association of the District of Columbia, Washington

**National****1962**

December 17-21—Varicose Veins—Cook County Graduate School of Medicine, Chicago

December 17-21—Proctoscopy and Sigmoidoscopy, Cook County Graduate School of Medicine, Chicago

December 17-21—Vaginal Approach to Pelvic Surgery, Cook County Graduate School of Medicine, Chicago

**1963**

January 20-25—American Academy of Orthopaedic Surgeons, Miami Beach, Florida

February 6-9—American College of Radiology, Chicago

**Physicians Recently Licensed in Tennessee**

John P. Howser, Memphis  
 Orville T. Evans, Jr., Nashville  
 Floyd James, Jackson, Mississippi  
 John L. Sonner, II, Knoxville  
 Roger L. Swingle, Auburn, Ala.  
 Samuel B. Caruthers, Jr., Dallas, Texas  
 Edward C. Hightower, Jr., Nashville  
 Warner G. Laster, Memphis  
 David E. McCarthy, San Jose, Calif.  
 Richard A. Heimburger, Springfield, Mo.  
 John A. Galloway, II, Huntsville, Ala.  
 Faith F. Nightingale, Nashville  
 Doris Y. Sanders, Nashville  
 Melton C. Ambrose, Memphis  
 James L. Faries, Denver, Colo.  
 Charles D. Kennedy, Knoxville  
 Melvyn M. Okeon, New Orleans, La.  
 Louis S. Graham, Jr., Nashville  
 Cecil E. McMurtry, Memphis  
 Edmund B. Brantly, Nashville  
 Henry T. Grizzard, Clarksville  
 Robert V. Russell, Nashville  
 William P. Trotter, Memphis  
 Mary B. Duffy, Knoxville

**Postgraduate Course****Pediatric-Obstetrical Problems****Vanderbilt University School of Medicine**

Obstetricians share with pediatricians the responsibility for the most critical period in human development—the perinatal period. The Departments of Obstetrics and Gynecology and of Pediatrics will discuss the relationship at a Postgraduate Course to be held January 31 and February 1, 1963, at Vanderbilt University Hospital.

## Tennessee Hospital Association and Tennessee State Medical Association Consulting Committee on Hospital Accreditation

For those hospital staffs interested in further information regarding the steps necessary to be taken for the hospitals to be accredited by the JCAH, following is a breakdown of the area representatives recently appointed jointly by the TSMA and THA. The following persons should be able to give you needed detailed information.

- I. MEMPHIS HOSPITAL COUNCIL: R. M. Miles, M.D., Memphis; Mr. Robert Scates, Assistant Administrator, Baptist Memorial Hospital; Mrs. Gertrude McCalip, RRL, Medical Record Librarian, Baptist Memorial Hospital, Memphis.
- II. WEST TENNESSEE HOSPITAL COUNCIL: Jack H. Booth, M.D., Jackson; Mr. T. Ray Jones, Administrator, Jackson-Madison County Hospital; Miss Katherine Harris, Medical Record Librarian, Jackson-Madison County Hospital, Jackson.
- III. MIDDLE TENNESSEE HOSPITAL COUNCIL: H. T. Lavely, Jr., M.D., Nashville; Sister Henrietta Neuhoft, D.C., Administrator, St. Thomas Hospital; Mrs. Virginia Smith, RRL, Medical Record Librarian, St. Thomas Hospital, Nashville.
- IV. SOUTH MIDDLE TENNESSEE HOSPITAL COUNCIL: H. T. Kirby-Smith, M.D., Sewanee; Mr. M. L. Southwick, Administrator, Emerald-Hodgson Hospital; Mrs. Jean S. Jackson, Medical Record Librarian, Emerald-Hodgson Hospital, Sewanee.
- V. CHATTANOOGA HOSPITAL COUNCIL: Moore J. Smith, Jr., M.D., Chattanooga; Mr. William E. Torrence, Administrator, Bradley County Memorial Hospital; Miss Carol Clevenger, Medical Record Librarian, Bradley County Memorial Hospital, Cleveland.
- VI. KNOXVILLE HOSPITAL COUNCIL: James N. Proffitt, M.D., Maryville; Mr. Tom W. Newland, Administrator, Fort Sanders Presbyterian Hospital; Miss Maude Ford, Medical Record Librarian, Fort Sanders Presbyterian Hospital, Knoxville.
- VII. MID-EAST TENNESSEE HOSPITAL COUNCIL: W. A. Hensley, Jr., M.D., Cookeville; Mr. Dan Altshuler, Administrator, LaFollette Community Hospital, LaFollette; Miss Geraldine Weatherly, RRL, Medical Record Librarian, Memorial Research Center and Hospital, Knoxville.
- VIII. UPPER EAST TENNESSEE HOSPITAL COUNCIL: Harmon L. Monroe, M.D., Erwin; Mr. W. W. Fanning, Administrator, Bristol Memorial Hospital; Mrs. Helen M. Deehan, RRL, Medical Record Librarian, Bristol Memorial Hospital, Bristol.



## 1962 MEMBERS OF TENNESSEE STATE MEDICAL ASSOCIATION

The list of members of the Tennessee State Medical Association is published in compliance with a provision of the Constitution and By-Laws. The data are accurate as of December 10, 1962. They are arranged in the following order:

List of active members.

Counties arranged alphabetically.

Towns in each county arranged alphabetically and the members in each town arranged alphabetically.

List of members residing outside the state arranged alphabetically.

List of veteran members.

List of members who have died in the year 1962.

|   |   |   |  |  |  |
|---|---|---|--|--|--|
| <p><b>ANDERSON COUNTY</b></p> <p><i>Clinton</i></p> <p>A. W. Bishop<br/>P. M. Dings<br/>J. S. Hall<br/>Henry Hedden, Jr.<br/>John J. Smith</p> <p><i>Lake City</i></p> <p>James Richards</p> <p><i>Norris</i></p> <p>S. G. McNeely</p> <p><i>Oak Ridge</i></p> <p>Gould A. Andrews<br/>Robt. P. Ball<br/>R. R. Bigelow<br/>Louis Bryan<br/>Alex G. Carabia<br/>Chas. Congdon<br/>Betty Cooper<br/>John P. Crews<br/>Kenneth Crounse<br/>Dexter Davis<br/>John DePersio<br/>Robt. E. DePersio<br/>J. L. Diamond<br/>Earl Eversole<br/>F. Guy Fortney<br/>Frank H. Genella, Jr.<br/>C. B. Gurney<br/>William P. Hardy<br/>J. M. Hays<br/>Ernest Hendrix<br/>William B. Holden<br/>R. W. Holland<br/>R. A. Johnson<br/>Harvey Keesee, Jr.<br/>Avery P. King<br/>Ralph Kniseley<br/>Kenneth S. Lane<br/>Thomas A. Lincoln<br/>Lynn F. Lockett<br/>Joseph S. Lyon<br/>Paul R. Marsh<br/>Dana W. Nance<br/>Bill M. Nelson<br/>Ema Little Palmer<br/>Elmer L. Parrott<br/>Lewis F. Preston<br/>William W. Pugh<br/>Charles J. Ragan<br/>Thos. L. Ray<br/>Richard Rucker<br/>Henry B. Ruley<br/>Kyle O. Rutherford<br/>(Mbr. Knox Co.)<br/>Beecher W. Sitterson<br/>Paul E. Spray<br/>Charles R. Sullivan<br/>Daniel M. Thomas<br/>Joe E. Tittle<br/>Andrew S. Wachtel<br/>David A. White<br/>Gino F. Zauolli</p> | <p><b>BENTON COUNTY</b></p> <p><i>Camden</i></p> <p>Wm. H. Blackburn<br/>Robert I. Bourne<br/>J. S. Butterworth*<br/>A. T. Hicks<br/>R. L. Horton<br/>John H. Overall, Jr.</p> <p><b>BLED SOE COUNTY</b></p> <p><i>Pikeville</i></p> <p>Thomas G. Cranwell<br/>(Mbr. Hamilton Co.)<br/>Rufus S. Morgan</p> <p><b>BLOUNT COUNTY</b></p> <p><i>Alcoa</i></p> <p>Oliver K. Agee<br/>Joe S. Henderson<br/>J. S. Phelan</p> <p><i>Louisville</i></p> <p>Beulah Kittrell</p> <p><i>Maryville</i></p> <p>J. H. Bowen<br/>H. A. Callaway, Jr.<br/>Lea Callaway<br/>J. W. Christofferson<br/>Mary D. Cragan<br/>W. C. Crowder<br/>Lynn F. Curtis<br/>W. N. Dawson<br/>Ted L. Flickinger<br/>R. H. Haralson, Jr.<br/>J. S. Henry<br/>James T. Holder<br/>Cecil B. Howard<br/>H. L. Isbell<br/>Edward M. Kelman<br/>E. P. Kintner<br/>Samuel S. Lambeth<br/>Roy W. Laugh-<br/>miller, Jr.<br/>Julian C. Lentz, Jr.<br/>C. B. Lequire<br/>Robert F. Leyen<br/>F. S. Lovingood<br/>Norman A. Mc-<br/>Kinnon, Jr.<br/>J. F. Manning<br/>James H. Millard,<br/>Jr.<br/>L. Q. Myers<br/>Robert D. Mynatt<br/>Tom Proctor<br/>Robert D. Proffitt<br/>James N. Proffitt<br/>B. P. Ramsey<br/>O. L. Simpson, Jr.<br/>Trent Vandergriff<br/>Lowell E. Vinsant<br/>John A. Yarbrough</p> | <p>John A. Rogness<br/>Wm. R. Smith<br/>C. T. Speck, Jr.<br/>W. C. Stanbery<br/>S. J. Sullivan<br/>Claud H. Taylor<br/>Madison S. Trehwitt<br/>Gilbert A. Varnell</p> <p><b>CAMPBELL COUNTY</b></p> <p><i>Caryville</i></p> <p>Chas. Rogers</p> <p><i>Jellico</i></p> <p>Charles A. Prater<br/>Ned C. Watts</p> <p><i>La Follette</i></p> <p>John S. Burrell*<br/>J. D. Crutchfield†<br/>M. L. Davis<br/>Royl F. Flemming<br/>P. T. Howard<br/>P. J. O'Brien<br/>John C. Pryse<br/>R. C. Pryse<br/>L. J. Seargeant<br/>Burgin H. Wood</p> <p><b>CANNON COUNTY</b></p> <p><i>Woodbury</i></p> <p>William A. Bryant<br/>(Mbr. Rutherford<br/>Co.)<br/>Russell E. Meyers<br/>(Mbr. Rutherford<br/>Co.)<br/>R. W. McMullen<br/>(Mbr. Rutherford<br/>Co.)</p> <p><b>CARROLL COUNTY</b></p> <p><i>Bruceton</i></p> <p>R. T. Keeton</p> <p><i>Huntingdon</i></p> <p>R. A. Douglass<br/>R. B. Wilson</p> <p><i>McKenzie</i></p> <p>E. E. Edwards, Jr.<br/>J. T. Holmes<br/>James H. Robertson</p> <p><b>CARTER COUNTY</b></p> <p><i>Elizabethton</i></p> <p>Robert J. Allen<br/>Hoyle E. Bowman<br/>Martin Bronson<br/>Richard Bucher<br/>E. L. Caudill, Jr.<br/>George M. Farrow<br/>W. G. Frost<br/>Clarence E. Gould-<br/>ing, Jr.<br/>Royce Holsey<br/>E. T. Pearson<br/>Dillard Sholes, Jr.<br/>D. J. Slagle<br/>Charles J. Wells<br/>James M. Willett</p> | <p><b>COCKE COUNTY</b></p> <p><i>Newport</i></p> <p>W. E. McGaha<br/>Robert B. McMahan<br/>Drew A. Mims<br/>Wm. B. Robinson<br/>Glen C. Shults<br/>Fred M. Valentine<br/>Fred M. Valentine,<br/>Jr.</p> <p><b>COFFEE COUNTY</b></p> <p><i>Manchester</i></p> <p>Clarence H. Farrar<br/>Howard A. Farrar<br/>Lawrence G.<br/>Gardner<br/>John A. Shields<br/>Conlter S. Young</p> <p><i>Tullahoma</i></p> <p>Harry Baer<br/>R. L. Brickell<br/>Jack T. Farrar<br/>B. E. Galbraith<br/>Edwin E. Gray, Jr.<br/>Charles B. Harvey<br/>J. M. King<br/>Earl E. Roles, Jr.<br/>C. C. Snoddy<br/>Chas. Harry Webb</p> <p><b>CROCKETT COUNTY</b></p> <p><i>Alamo</i></p> <p>E. O. Prather, Jr.</p> <p><i>Bells</i></p> <p>E. Farrow<br/>Charles N. Hickman<br/>R. W. Mayfield<br/>Wm. R. Sullivan</p> <p><i>Maury City</i></p> <p>Joseph E. Culpie</p> <p><b>CUMBERLAND COUNTY</b></p> <p><i>Crossville</i></p> <p>James T. Callis<br/>R. Gene Gravens<br/>Paul A. Erwin, Jr.<br/>Wm. E. Evans<br/>A. K. Husband<br/>Donathan Ivey<br/>H. F. Lawson<br/>Robert M. Metcalfe<br/>Stuart P. Seaton</p> <p><i>Pleasant Hill</i></p> <p>Margaret K. Stewart</p> <p><b>DAVIDSON COUNTY</b></p> <p><i>Donelson</i></p> <p>E. E. Anderson<br/>Luther A. Beazley<br/>C. N. Gessler<br/>Chas. H. Huddleston<br/>Joseph E. Hurt<br/>Joe M. Miller<br/>James B. Millis<br/>Luther E. Smith<br/>Wm. B. Wadlington</p> <p><i>Goodlettsville</i></p> <p>W. R. C. Stewart</p> <p><i>Madison</i></p> <p>William J. Card<br/>Sam W. Carney, Jr.<br/>Frederic B. Colburn<br/>George B. Haglan<br/>Jefferson C.<br/>Pennington, Jr.<br/>Robt. L. Pettus, Jr.<br/>D. R. W. Shupe<br/>Joe E. Sutherland<br/>Harry Wittzum</p> | <p><i>Madison College</i></p> <p>Hillis F. Evans<br/>Julian C. Gant<br/>Cyrus E. Kendall</p> <p><i>Nashville</i></p> <p>Crawford W. Adams<br/>R. W. Adams, Jr.<br/>J. W. Alford, Jr.<br/>Joseph H. Allen<br/>Wm. E. Allison<br/>J. Clyde Alley, Jr.<br/>Ben J. Alper<br/>W. L. Alsobrook<br/>Arthur R. Anderson<br/>Edwin B. Anderson<br/>H. R. Anderson<br/>J. Sumpter Ander-<br/>son, Jr.<br/>Robt. S. Anderson<br/>J. J. Ashby<br/>N. F. Atria<br/>J. Mansfield Bailey<br/>(Mbr. Wilson Co.)<br/>Joseph J. Baker<br/>Sidney W. Ballard<br/>Preston H. Bandy<br/>Edwin H. Barksdale<br/>Randolph Batson<br/>David S. Bayer<br/>Eric Bell, Jr.<br/>Lynch D. Bennett<br/>Edmund W. Benz<br/>Stanley Bernard<br/>John H. Beveridge<br/>Otto Billig<br/>F. T. Billings, Jr.<br/>Geo. T. Binkley, Jr.<br/>Russell T. Birming-<br/>ham<br/>Engene L. Bishop,<br/>Jr.<br/>Lindsay K. Bishop<br/>Frank M. Blackwell<br/>James B. Boddie, Jr.<br/>John B. Bond<br/>Walter A. Bonney, Jr.<br/>Geo. W. Bounds, Jr.<br/>John M. Boylin<br/>H. B. Brackin, Jr.<br/>Cloyce F. Bradley<br/>G. Hearn Bradley<br/>David V. Bradley<br/>James M. Brakefield<br/>T. F. Bridges<br/>Dorothy L. Brown<br/>M. F. Brown<br/>(Mbr. Lincoln Co.)<br/>J. Thomas Bryan<br/>John C. Burch<br/>Joseph G. Burd<br/>R. N. Buchanan, Jr.<br/>Roger B. Burrus<br/>Swan Burriss<br/>B. F. Byrd, Jr.<br/>James I. Callaway<br/>Richard O. Cannon<br/>Joe M. Capps<br/>George K. Carpenter<br/>G. K. Carpenter, Jr.<br/>Oscar W. Carter<br/>Norman M. Cassell<br/>W. R. Cate<br/>John S. Cayce<br/>Lee F. Cayce<br/>Robert L. Chalfant<br/>Eric M. Chazen<br/>Abraham P. Cheij<br/>Amos Christie<br/>William M. Clark<br/>Jeannine A. Classen<br/>Everett M. Clayton,<br/>Jr.<br/>Cully A. Cobb, Jr.<br/>Henry A. Cohen<br/>John H. Coles, III<br/>Harold A. Collins<br/>W. J. Core<br/>Orrie A. Couch, Jr.<br/>Sam C. Cowan, Jr.<br/>Frederic E. Cowden<br/>Geo. Boyd Crafton</p> | <p>H. James Crecraft<br/>R. R. Crowe<br/>E. Perry Crump<br/>W. Andrew Dale<br/>Rollin A. Daniel, Jr.<br/>Wm. J. Darby<br/>Philip V. Daugherty<br/>T. W. Davis<br/>Thomas C. Delvans,<br/>Jr.<br/>Wm. A. Demonbreun<br/>Joseph C. Dennison<br/>Walter L. Divelev<br/>Wm. M. Doak<br/>Wm. D. Donald<br/>Earl D. Dorris<br/>Robert T. Doster<br/>L. Rowe Driver<br/>Ray L. Dubuison<br/>Price H. Duff<br/>George E. Duncan<br/>Herbert Duncan<br/>Wm. H. Edwards<br/>Paul Ekan, D.D.S.<br/>Phillip C. Elliott<br/>James W. Ellis<br/>Irwin B. Eskind<br/>Harry M. Estes<br/>E. Wm. Ewers<br/>Don L. Eyer<br/>John L. Farringer,<br/>Jr.<br/>W. B. Fairis<br/>W. F. Faulk, Jr.<br/>R. O. Fessey<br/>Jacob N. Fidelholtz<br/>John P. Fields<br/>Robert M. Finks<br/>Robert M. Foote<br/>Howard R. Foreman<br/>Garth E. Fort<br/>John H. Foster<br/>S. Benjamin Fowler<br/>Richard France<br/>Horace M. Frazier<br/>John W. Frazier, Jr.<br/>Thomas F. Frist<br/>James L. Fuqua<br/>Robert K. Galloway<br/>Chas. K. Gardner<br/>James C. Gardner<br/>Sam Y. Garrett<br/>Hamilton V. Gayden<br/>Horace C. Gayden<br/>Charles M. Gill<br/>J. P. Glover, Jr.<br/>John R. Glover<br/>Fred Goldner, Jr.<br/>James E. Goldsberry<br/>David K. Gotwald<br/>Louis S. Graham, Jr.<br/>Burton P. Grant<br/>Geo. T. Graves, Jr.<br/>Herschel A. Graves,<br/>Jr.<br/>Paul A. Green, Jr.<br/>Clifton E. Greer, Jr.<br/>John W. Griffith, Jr.<br/>John H. Griscom<br/>Thos. W. Grizzard<br/>Laurence A. Gross<br/>man<br/>Milton Grossman<br/>Wm. E. Gupton, Jr.<br/>Arnold Haber, Jr.<br/>David W. Hailey<br/>Chas. E. Haines, Jr.<br/>Wallace H. Hall, Jr.<br/>Thos. B. Halton<br/>Chas. M. Hamilton<br/>J. R. Hamilton<br/>W. M. Hamilton<br/>Roy G. Hammonds<br/>Axel C. Hansen<br/>Anderson P. Harris<br/>Jackson Harris<br/>E. F. Harrison (Mbr.<br/>Hamilton Co.)<br/>A. B. Harwell<br/>James T. Hayes<br/>John H. L. Heintzel-<br/>man</p> |
|---|---|---|--|--|--|

\*In Service  
†Residency

James B. Helme  
J. L. Herrington, Jr.  
John G. Herzfeld  
B. K. Hibbett, III  
J. B. Hibbitts, Jr.  
William Higginson  
Elmore Hill, D.M.D.  
I. R. Hillard  
John W. Hillman  
R. H. Hirsch  
(Mbr. Robertson Co.)  
Charlie Joe Hobdy  
Geo. W. Holcomb  
Jr.  
A. N. Hollabaugh,  
Jr.  
Chas. F. Hollabaugh  
W. W. Hubbard  
James M. Hudgins  
Granville W. Hudson  
R. H. Hutcheson, Jr.  
Vernon Hutton, Jr.  
Maurice Hyman  
M. D. Ingram, Jr.  
Albert P.  
Isenhour, Jr.  
J. McK. Ivie  
W. F. B. James  
John A. Jarrell, Jr.  
D. J. Johns  
Alfonso P. Johnson  
Hollis E. Johnson  
Ira T. Johnson, Jr.  
James W. Johnson  
Edmund P. Jones  
T. M. Jordan  
Orrin L. Jones, Jr.  
R. H. Kampmeier  
Herman J. Kaplan  
A. E. Keller  
J. Allen Kennedy  
Wm. G. Kennon, Jr.  
John P. Kinnard  
Lowry D. Kirby  
Carl T. Kirchmaier  
J. A. Kirtley, Jr.  
Eugene C. Klatte  
O. Morse Kochtitzky  
Leonard J. Koenig  
C. J. Ladd, D.D.S.  
Roland D. Lamb  
Ralph M. Larsen  
Horace T. Lavelly,  
Jr.  
David H. Law  
A. R. Lawson  
G. Allen Lawrence  
Jas. D. Lester  
Patrick R. Levesque  
Malcolm R. Lewis  
Milton S. Lewis  
Grant W. Liddle  
Richard C. Light  
Joanne Linn  
Robert J. Linn  
A. B. Lipscomb  
Joseph A. Little  
Thomas C. Little-  
john  
S. L. Lowenstein  
Frank H. Lutton  
Philip L. Lyle  
Robt. H. Magruder  
Guy Milford Maness  
W. R. Manlove, Jr.  
Edw. H. Martin,  
D.D.S.  
Travis H. Martin  
Ralph W. Massie  
Jas. Andrew Mayer  
Ben R. Mayes  
Charles W.  
MacMillan  
Charles W.  
MacMillan  
Robert D. Macmillan  
Curtis P. McCam-  
mon  
Frank G. McCamp-  
bell  
(Mbr. Benton-  
Humphreys)  
G. S. McClellan  
Robt. E. McClellan  
C. C. McClure, Jr.  
Robt. L. McCracken  
M. Chas. McMurray  
Barton McSwain  
Wm. F. Meacham  
Arnold M.  
Meirowsky  
Andrew H. Miller  
Cleo M. Miller  
James B. Miller  
Lloyd C. Miller

\*In Service

Edwin H. Mitchell  
R. W. Money  
C. Calvin Moore  
Harry T. Moore, Jr.  
Theodore Morford  
N. B. Morris  
P. G. Morrissey, Jr.  
M. K. Moulder  
I. Armistead Nelson  
Dewey Nemece  
Tom E. Nesbitt  
E. V. Newman  
Oscar F. Noel  
Margaret S. Norris  
Robert W. Noyes  
John R. Olson  
Wm. F. Orr, Jr.  
James C. Overall  
Fred W. T. Overton  
Fred D. Ownby  
Richard P. Ownbey  
Homer M. Pace, Jr.  
Thomas F. Paine,  
Jr.  
Roy Wm. Parker  
Thomas F. Parrish  
Bernard J. Pass  
John W. Patterson  
R. C. Patterson, Jr.  
C. Gordon  
Peerman, Jr.  
Edna S. Pennington  
Thos. Guv Pen-  
nington  
George L. Perler  
Frank A. Perry  
M. A. Petrone  
James M. Phythyon  
David R. Pickens,  
Jr.  
Charles B. Pittinger  
Phillip P. Porch  
T. Edward Potts  
Robert W. Quinn  
James Seay Read  
Robert M. Reed  
John Reese  
E. M. Regen  
Eugene M. Regen, Jr.  
S. C. Reichman  
Roy J. Renfro  
Vernon H. Reynolds  
John R. Rice  
Greer Ricketson  
Douglas H. Riddell  
Elkin L. Rippy  
S. S. Riven  
Joseph D. Robert-  
son  
E. Miller Robinson  
David E. Rogers  
D. T. Rolfe  
Marvin J. Rosen-  
blum  
Sol A. Rosenblum  
Louis Rosenfeld  
P. M. Ross  
Fred A. Rowe, Jr.  
Robert M. Roy  
Robert N. Sadler  
Louis Sampson  
Dan S. Sanders, Jr.  
Houston Sarraat  
John L. Sawyers  
J. H. Sayers, Jr.  
C. David Scheibert  
Stephen Schillig  
Jack C. Schmitt,  
D.D.S.  
Lawrence G. Schull  
Herbert J. Schul-  
man  
H. Wm. Scott, Jr.  
A. B. Scoville, Jr.  
C. Gordon Sell  
Robert S. Shacklett  
John L. Shapiro  
Harry S. Shelly  
Ben A. Shelton  
Wm. F. Sheridan,  
Jr.  
Abram C. Shmerling  
N. S. Shofner  
Brian T. Shorney  
Harrison H. Shoul-  
ders, Jr.  
Harrison J. Shull  
Ammie T. Sikes  
T. E. Simpkins  
Wm. T. Slonecker  
Chas. B. Smith  
Daugh W. Smith  
Henry C. Smith  
Marion L. Smith  
Bertram E. Sprockin  
Daphne Sprouse  
Richard Steele

Sam E. Stephenson,  
Jr.  
Lee Wm. Stewart  
Frank W. Stevens  
Hugh L. C. Stevens  
Joe M. Strayhorn  
W. D. Strayhorn  
Wilborn D. Strode  
Wm. D. Sumpter, Jr.  
Arthur J. Suther-  
land  
Richard P. Taber  
G. J. Tarleton, Jr.  
John M. Tanner  
Ed L. Tarpley  
Pauline Tenzel  
Robert T. Terry  
Andrew B. Thach,  
Jr.  
C. S. Thomas  
J. N. Thomasson  
John B. Thomison  
Chas. B. Thorne  
W. O. Tirrill, Jr.  
Kirkland W. Todd,  
Jr.  
Robt. H. Tosh  
C. C. Trabue, IV  
Leslie E. Traugher,  
Jr.  
Carr A. Treherne  
C. B. Tucker  
John M. Tudor  
Wm. O. Vaughan  
Ethel Walker  
Matthew Walker  
John M. Wampler  
James W. Ward  
Russell D. Ward  
Thomas F. Warder  
Paul L. Warner  
Thomas S. Weaver  
B. H. Webster  
Albert Weinstein  
Bernard Weinstein  
Charles W. Wells  
A. Lawrence White  
Frank E. Whitacre  
Joe T. Whitfield  
Earl E. Wilkinson  
Edwin L. Williams  
W. Carter Williams  
(Mbr. Smith Co.)  
Frank G. With-  
erspoon  
Norman E.  
Witthauer  
Frank C. Womack,  
Jr.  
C. C. Woodcock  
M. C. Woodfin  
John R. Woods  
John L. Wyatt  
John B. Youmans  
Kate Savage Zerfoss  
Thomas B. Zerfoss  
Thos. B. Zerfoss, Jr.  
  
*Old Hickory*  
T. D. Dailey  
E. P. Johnson  
James K. Lawrence  
R. P. Miller  
Henry D. Murray  
Howard C. Pomeroy  
E. B. Rhea  
W. W. Wilson  
  
DECATUR  
COUNTY  
*Parsons*  
H. L. Conger  
  
DEKALB COUNTY  
*Alexandria*  
H. Odell Mason  
(Mbr. Smith Co.)  
  
*Smithville*  
J. W. Tenpenny  
(Mbr. Rutherford  
Co.)  
  
DICKSON COUNTY  
*Charlotte*  
James C. Elliott  
  
*Dickson*  
J. T. Allen  
W. A. Bell, Jr.  
Mary Baxter Cook  
W. A. Crosby  
Halden W. Hooper

J. T. Jackson  
Lawrence C.  
Jackson  
W. M. Jackson  
E. W. McPherson  
  
DYER COUNTY  
*Dyersburg*  
W. E. Anderson  
J. Paul Baird  
Keim Baird\*  
Thos. V. Banks  
J. D. Connell  
P. A. Conyers  
James W. Bonds  
Huey T. Holt\*  
Thomas W. Johnson  
Robert T. Kerr  
O. B. Landrum  
Fred Moore  
J. C. Moore  
J. G. Price  
R. David Taylor  
W. I. Thornton, Jr.  
Lydia V. Watson  
  
*Newbern*  
Wm. L. Phillips  
P. B. Widdis  
  
*Trimble*  
Dillard McCown  
V. Art Murphy  
  
FAYETTE  
COUNTY  
*Somerville*  
John L. Armstrong  
John M. Bishop  
Frank S. McKnight  
Karl B. Rhea  
Lee Rush, Jr.  
  
FENTRESS  
COUNTY  
*Jamestown*  
B. Fred Allred  
Guy C. Pinckley  
Jack C. Smith  
Shelby O. Turner  
  
FRANKLIN  
COUNTY  
*Decherd*  
P. J. Flippin  
Dewey W. Hood  
  
*Huntland*  
L. J. Stubblefield  
(Mbr. Lincoln Co.)  
  
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Charles B. Keppler  
E. W. Kirby-Smith  
H. T. Kirby-Smith  
  
*Winchester*  
Jo C. Anderton  
Reynolds Fite  
Gerald E. Johnson  
George L. Smith  
James Van  
Blaricum  
  
GIBSON COUNTY  
*Dyer*  
John W. Ellis  
  
*Humboldt*  
H. G. Barker  
Chas. W. Davis  
A. H. Fick  
Jas. D. Rozzell  
George E. Spangler  
  
*Medina*  
Robert Morris  
  
*Milan*  
H. P. Clemmer  
James O. Fields  
F. L. Keil  
Philip G. Williams  
  
*Trenton*  
Edw. C. Barker  
E. C. Crafton  
James W. Hall  
  
*Yorkville*  
Bill Murray

GILES COUNTY  
*Ardmore*  
C. B. Marshall  
(Mbr. Lincoln Co.)  
  
*Pulaski*  
Robert B. Agee  
K. M. Kressenberg  
W. K. Owen  
J. U. Speer  
D. M. Spotwood  
  
GRAINGER  
COUNTY  
*Rutledge*  
L. C. Bryan  
(Mbr. Hamblen Co.)  
T. J. Hill  
(Mbr. Hamblen Co.)  
  
*Washburn*  
Robt. J. Phlegar  
(Mbr. Hamblen Co.)  
  
GREENE COUNTY  
*Greeneville*  
V. R. Bottomley  
Robert G. Brown  
Robt. S. Cowles, Jr.  
Luke L. Ellenburg  
Haskell W. Fox  
R. B. Gibson  
Hal Henard  
N. P. Horner  
C. D. Huffman  
Ben J. Keebler  
C. B. Laughlin  
Haskell B. McCol-  
lum  
W. Lewis McGuffin  
James R. McKinney  
Kenneth C. Susong  
John M. Wilson  
  
*Mosheim*  
I. Dale Brown  
G. R. Evans  
  
HAMBLETON  
COUNTY  
*Morristown*  
W. K. Alexander  
Lee R. Barclay  
Howard T. Brock  
Robert L. Brown  
John D. Caldwell  
Kemp Davis  
C. J. Duby  
Y. Alvin Jackson  
John Kinser  
F. J. Little, Jr.  
E. Gene Lynch  
Cecil F. Mynatt, Jr.  
L. W. Nabers  
John L. Pearce  
J. W. Richardson  
Charles S. Scott  
Powell M. Trusler  
  
HAMILTON  
COUNTY  
*Chattanooga*  
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Jesse E. Adams  
John W. Adams, Jr.  
Julian Adams  
Wm. P. Aiken  
C. H. Alper  
E. R. Anderson  
Harry S. Anderson  
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J. L. Arnold  
Stewart H. Auerbach  
Merton Baker  
Robert E. Baldwin  
Fred B. Ballard, Jr.  
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George E. Beckman,  
Jr.  
Samuel S. Binder  
W. R. Bishop  
Robt. W. Boatwright  
Robert J. Boehm  
Walter E. Boehm  
Wm. D. Brackett  
Frank S. Brannen  
Roger Breyspraak  
J. C. Brooks, Jr.

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III  
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John A. Burke  
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Earl R. Campbell  
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Jr.  
Maurice A. Canon  
E. E. Carrier  
John P. Carter  
Bennett W. Caugh-  
ran  
Douglas  
Chamberlain  
Edwin F. Chobot,  
Jr.  
Charles R. Clark  
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John T. Evans  
Robt. E. Eysen  
J. R. Fancher  
George W. Farris  
Richard Van  
Fletcher  
A. C. Ford  
Wm. R. Fowler  
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Alton G. Hair  
Foster Hampton, Jr.  
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J. M. Higginbotham  
J. F. Hobbs  
Richard G.  
Hofmeister  
Pope B. Holliday  
Jr.  
H. W. Hollings-  
worth  
Benton B. Holt, Jr.  
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Rudolph Hoppe  
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Durwood L. Kirk  
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Rudolph M. Landry  
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Lawrence H. Las-  
siter  
Joseph V. Lavecchia,  
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Stewart Lawwill, Jr.  
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Joe Anne Quillian  
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Moore J. Smith, Jr.  
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Philip C. Sottong  
Robert T. Spalding  
James H. Spaulding  
Richard F. Stappen-  
beck  
Eleanor Stafford  
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Wesley Stoneburner  
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Charles L. Suggs, Jr.  
Bernard Tepper

Jack Tepper  
Marjorie Tepper  
Guy K. Terrell  
Chas. Roberts  
Thomas  
Paul C. Thompson  
Robt. C. Thompson  
David H. Turner  
A. S. Ulin  
Louis Ulin  
Minnie R. Vance  
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George G. Young  
Guy Zimmerman,  
Jr.  
Joseph I. Zucker-  
man  
*Hixson*  
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Jr.  
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Earl H. Smith  
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MOUNTAIN*  
Dean W. Golley  
Thos. S. Long  
*SIGNAL  
MOUNTAIN*  
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A. D. Roberts  
Arch V. Smith  
*Soddy*  
Ann Hallett  
*HARDEMAN  
COUNTY*  
*Bolivar*  
D. L. Brint  
H. H. Barham  
Edwin M. Levy  
B. F. McAnulty  
J. Knox Tate  
*Grand Junction*  
Nicholas H.  
Edwards  
*Whiteville*  
Aubrey Richards  
*HARDIN COUNTY*  
*Saltillo*  
Howard W. Thomas  
*Savannah*  
H. D. Blankenship,  
Jr.  
J. W. Carroll  
R. B. Deberry  
Thos. V. Roe  
Howard W.  
Whitaker, Jr.  
*HAWKINS  
COUNTY*  
*Church Hill*  
Warner L. Clark  
(Mbr. Sullivan-  
Johnson)  
Robt. E. Keith  
(Mbr. Sullivan  
Johnson)  
F. H. Roberson, Jr.  
(Mbr. Sullivan-  
Johnson)  
*Eidson*  
John M. Pearson  
*Rogersville*  
William E. Gibbons  
W. H. Lyons  
*HAYWOOD  
COUNTY*  
*Brownsville*  
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Sue W. Johnson  
Roy M. Lanier  
David E. Stewart  
John C. Thornton,  
Jr.  
J. K. Welch, Jr.

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COUNTY*  
*Lexington*  
R. M. Conger  
C. J. Huntsman  
W. F. Jones, Jr.  
Maurice N. Lowry  
W. C. Ramer  
J. C. Stripling  
*HENRY COUNTY*  
*Paris*  
Arthur C. Dunlap  
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Ralph L. Eslick  
R. Graham Fish  
I. H. Jones  
E. P. Mobley, Jr.  
Joe D. Mobley  
John E. Neumann  
W. G. Rhea  
Kenneth G. Ross  
J. Ray Smith  
Thomas C. Wood  
*HICKMAN  
COUNTY*  
*Centerville*  
Parker D. Elrod  
*HOUSTON  
COUNTY*  
*Erin*  
O. S. Lutton  
(Mbr. Montgomery  
Co.)  
Albert J. Mitchum  
(Mbr. Montgomery  
Co.)  
*HUMPHREYS  
COUNTY*  
*New Johnsonville*  
James John Lawson  
*Waverly*  
H. C. Capps  
Autry C. Emmert  
Dorris A. Sanders  
Joseph W. Stephens  
Arthur W. Walker  
*JACKSON  
COUNTY*  
*Gainesboro*  
W. T. Anderson  
E. Morgan Dudney  
L. R. Dudney  
Jack S. Johnson  
*JEFFERSON  
COUNTY*  
*Dandridge*  
O. L. Merritt  
(Mbr. Hamblen Co.)  
*Jefferson City*  
T. A. Caldwell  
(Mbr. Knox Co.)  
John W. Ellis  
(Mbr. Hamblen Co.)  
Sam C. Fain  
(Mbr. Hamblen Co.)  
Frank Milligan  
(Mbr. Hamblen Co.)  
Estle P. Muncy  
(Mbr. Hamblen Co.)  
*Strawberry Plains*  
Robert W. Creech  
(Mbr. Knox Co.)  
Paul L. Jourdan  
(Mbr. Knox Co.)  
R. M. Webster  
(Mbr. Knox Co.)  
*White Pine*  
E. Dale Allen  
(Mbr. Hamblen Co.)  
E. R. Baker  
(Mbr. Hamblen Co.)  
*JOHNSON  
COUNTY*  
*Mountain City*  
Paul J. Bundy  
R. O. Glenn  
*KNOX COUNTY*  
*Concord*  
Malcolm Cobb  
R. H. Duncan  
B. D. Goodge

*Corryton*  
A. D. Simmons  
*Fountain City*  
George L. Fillmore  
A. L. Jenkins  
F. H. Payne  
J. Gordon Smith  
*Knoxville*  
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Alton Absher  
N. D. Acree, Jr.  
J. E. Acker, Jr.  
T. Edward Acuff  
Edgar D. Akin (Mbr.  
Roane Co.)  
Robert L. Akin  
Charles M.  
Armstrong  
Edmund B. Andrews  
John W. Avera  
Anne B. Avery  
Robert M. Baker  
O. E. Ballou  
Floyd N. Bankston  
Walter C. Beahm  
Daniel F. Beals  
Spencer Y. Bell  
Bruce B. Bellomy  
Walter H. Benedict  
Chas. W. Black  
Wade H. Boswell  
H. O. Bourkard  
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Aubra D. Branson  
Robert G. Brashear  
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Clayton M. Brodine  
Robert T. Brooks  
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Horace E. Brown  
Raymond C. Bunn  
James A. Burdette  
John H. Burkhardt  
J. Ed Campbell  
John W. Campbell  
P. H. Cardwell  
C. S. Carlson  
Frederick W. Carr  
L. G. Caylor  
Jack Chesney  
J. Warren Chesney  
H. S. Christian  
H. E. Christenberry,  
Jr.  
K. W. Christenberry  
W. F. Christenberry  
C. L. Chumley  
William E. Clark  
Edward S. Clayton  
H. G. Coker  
I. Reid Collman  
Margherita C. Cook  
Dennis Coughlin,  
Jr.  
M. L. Courtney  
James B. Cox  
Richard C. Crain  
John J. Craven  
William R. Cross  
Miles S. Crowder  
Joe C. Crumley  
J. P. Cullum  
H. K. Cunningham  
C. Harwell Dabbs  
John H. Dougherty  
Elynn V. Davidson  
Daniel Davis  
Lloyd C. Davis  
Martin Davis  
Oliver DeLozier  
R. V. DePue, Jr.  
W. A. DeSautelle  
A. W. Diddle  
Sheldon Domm  
Lucile Dooley  
W. F. Dorsey  
James E. Downs  
James B. Dukes  
Chas. R. Earnest, Jr.  
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Edward W. Ellis  
J. B. Ely  
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Mark P. Fecher  
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Frank B. Gaylon, Jr.  
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Wm. H. Gardner  
George L. Gee, Jr.

Robert H. Gentry  
J. Vivian Gibbs  
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Robt. B. Gilbertson  
Abner M. Glover  
McChesney Goodall  
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Glenn D. Grubb  
T. F. Haase, Jr.  
J. R. Hamilton, Jr.  
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James P. Harmon  
David N. Hawkins  
Eugene L. Haun  
Louis A. Haun  
J. T. J. Hayes, Jr.  
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N. A. Henderson  
George G. Henson  
Zelma L. Herndon  
Howard K. Hicks  
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John R. Hill  
Oliver W. Hill, Jr.  
Victor Hill  
R. L. Hobart, Jr.  
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Leon C. Hoskins  
George Turner  
Howard, Jr.  
Moses W. Howard  
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Perry M. Huggin  
Charles C. Hutson  
E. C. Idol  
Geo. L. Inge  
C. E. Irwin  
Harry H. Jenkins  
Francis S. Jones  
Margaret E. Joyce  
William M. Keeling  
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A. Glenn Kennedy  
John O. Kennedy  
John E. Kesterson  
Stacy H. Kinlaw  
Victor H. Klein, Jr.  
Lamar L. Knight  
Willis F. Kraemer  
A. Hobart Lancaster  
Robert F. Lash  
William M. Law  
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Robert S. Leach  
Walter J. Lee, Jr.  
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Robert A. Lewis  
Felix G. Line  
Eugene B. Linton  
Thomas L. Lomas-  
ney  
Frank London  
Henry H. Long  
Geo. S. Mahon  
Margaret Maynard  
Bruce R. Mc-  
Campbell  
Roy C. McCrary  
A. R. McCullough  
M. D. McCullough  
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Foy B. Mitchell  
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Travis Morgan  
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Arthur J. Muller  
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William S. Muse  
James D. Myers  
J. B. Naive  
Carl A. Nelson, Jr.  
William A. Nelson  
H. L. Neuensch-  
wander  
Robert W. Newman  
Eugene P. Niceley  
Hazel M. Nichols  
Ralph G. Nichols  
G. T. Novinger  
Elvin B. Noxon  
Kenneth A.  
O'Connor  
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B. M. Overholt  
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Pride  
Thomas C. Prince,  
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Freeman L. Rawson  
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*Mascot*  
John C. Adler  
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*Powell Station*  
L. F. Cruze

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(Mbr. Northwest  
Tenn. Academy)*Ripley*A. J. Butler, Jr.  
J. L. Dunavant  
J. D. McCown (Mbr.  
N.W. Tenn. Acad.)  
James Howard  
Ragsdale  
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P. W. Walker, Jr.  
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COUNTY*Lawrenceburg*V. H. Crowder  
W. O. Crowder  
J. W. Danley  
Boyd P. Davidson  
L. B. Molloy  
V. L. Parrish  
Carson E. Taylor*Loretto*Ray E. Methvin  
M. H. Weathers

## LEWIS COUNTY

*Hohenwald*Don Gaines  
B. J. SmithLINCOLN  
COUNTY*Fayetteville*Anne U. Bolner  
L. M. Donaldson  
William D. Jones  
Ben H. Marshall  
J. V. McRady  
T. A. Patrick, Jr.  
C. D. Toone  
Paul E. WhittemoreLOUDON  
COUNTY*Lenoir City*Harold D. Freedman  
(Mbr. Knox Co.)  
Walter C. Shea, Jr.  
R. V. Taylor  
(Mbr. Knox Co.)*Loudon*Corrie Blair  
(Mbr. Knox Co.)  
Samuel A. Harrison  
(Mbr. Knox Co.)  
W. B. Harrison  
(Mbr. Knox Co.)  
Wm. T. McPeake  
(Mbr. Knox Co.)  
J. R. Watkins  
(Mbr. Knox Co.)

## MACON COUNTY

*Lafayette*C. C. Chitwood, Jr.  
Jack C. Clark  
E. M. Froedge  
Max E. PainterMADISON  
COUNTY*Bemis*Kelly Smythe  
R. T. Tucker, Jr.  
Allen N. Williams,  
Jr.*Jackson*Harold K. Alsbrook  
Thomas K. Ballard  
R. J. BarnettG. H. Berryhill  
Jack H. Booth  
Wm. H. Brooks  
Swan Burrus  
Swan Burrus, Jr.  
Hughes Chandler  
Wm. G. Crook  
G. B. Dodson, Jr.  
J. E. Douglass  
Roy A. Douglass, Jr.  
Clarence Driver  
E. W. Edwards  
Blanche Somerville  
Emerson  
Blair D. Erb  
Charles W. Fitch  
(Mbr. Henry Co.)  
Fred M. Friedman  
O. L. Fitts  
Oliver H. Graves  
W. W. Harrison  
Geo. Harvey, Jr.  
Robert S. Hill  
C. L. Holmes  
G. B. Hubbard  
Chester K. Jones  
G. Frank Jones  
Leland M. Johnston  
Duval H. Koonce  
J. D. Lane (Mbr.  
Macon Co.)  
James A. Langdon,  
Jr.Harold T. McIver  
Frank A. Moore  
H. N. Moore  
A. J. Mueller  
Lamb B. Myhr  
R. M. Neudecker  
John B. Nuckolls  
George Pakis, Jr.  
L. G. Pascal, Jr.  
J. C. Pearce  
James A. Phillips  
W. M. Phillips  
J. E. Powers  
John G. Riddler  
Wm. H. Roberts  
Charles C. Stauffer  
James L. Thomas  
J. R. Thompson, Jr.  
S. Allen Truex  
Charles H. Webb  
W. Webb Wilson  
F. E. Williamson,  
Jr.  
George B. Wyatt  
Paul E. Wylie  
H. R. YarbroMARION  
COUNTY*Jasper*J. G. McMillan  
(Mbr. Hamilton Co.)  
*South Pittsburg*  
J. B. Havron  
(Mbr. Hamilton Co.)  
William Headrick,  
Jr.  
(Mbr. Hamilton Co.)  
Eugene Ryan  
(Mbr. Hamilton  
Co.)  
Viston Taylor, Jr.  
(Mbr. Hamilton Co.)  
*Whitwell*  
Cleo Chastain  
(Mbr. Hamilton  
Co.)  
Wm. G. Shull  
(Mbr. Hamilton Co.)MARSHALL  
COUNTY*Lewisburg*Kenneth Brown  
J. T. Gordon  
Hoyt C. Harris  
J. C. Leonard  
(Mbr. Maury Co.)  
James W. Lim-  
baugh, Jr.  
Kenneth J. Phelps  
Wm. S. Poarch  
J. F. Rutledge  
Wm. L. Taylor  
W. A. Walker

## MAURY COUNTY

*Columbia*D. B. Andrews  
Wendell C. BennettMildred Casey  
William N. Cook  
Edward Ewton  
Wm. G. Fuqua  
C. C. Gardner, Jr.  
Daniel R. Gray, Jr.  
Valton C. Harwell, Jr.  
Harry C. Helm  
Wm. N. Jernigan  
Ralph Kustoff  
Ambrose M. Langa  
Robin Lyles  
Geo. R. Mayfield, Jr.  
Clay R. Miller  
Edwin K. Provost  
Warren Rucker  
B. J. Vinson  
Leon S. Ward  
J. W. Wilkes, Jr.  
Thomas K. Young,  
Jr.*Mt. Pleasant*

Taylor Rayburn, Jr.

## McMINN COUNTY

*Athens*W. R. Arrants  
Karl K. Boyd  
Charles T. Carroll  
L. D. Curtner  
R. W. Epperson  
C. O. Foree  
W. Edwin Foree  
R. Danny Hays  
Robert G. Hewgley  
Milnor Jones  
J. A. Powell, Jr.  
Helen M. Richards  
L. H. Shields  
Robert W. Trotter*Englewood*

J. F. Cleveland

*Etowah*Wm. K. Frye  
S. Boyd McClary, Jr.  
S. B. McClary, III  
John C. Sharp  
H. P. Whittle*McNairy*McNAIRY  
COUNTY  
*Selmer*  
T. N. Humphrey  
Harry L. Peeler  
James H. Smith  
Montie E. Smith, Jr.

## MEIGS COUNTY

*Decatur*William M. Davis  
(Mbr. McMinn Co.)*Monroe*MONROE  
COUNTY  
*Madisonville*  
R. C. Kimbrough  
F. Houston Lowry  
Horace M. McGuire*Sweetwater*J. H. Barnes  
W. J. Cameron  
Joe H. Henshaw  
D. F. Heuer, Jr.  
T. A. Lowry  
Joe K. Wallace  
J. E. Young*Vonore*Troy Bagwell  
(Mbr. Knox Co.)MONTGOMERY  
COUNTY*Clarksville*Edward R. Atkinson  
Carlos B. Brewer  
F. D. Coleman  
E. P. Cutter  
Sam M. Doane, Jr.  
V. H. Griffin  
T. K. Hepler  
Bryan T. Iglehart  
Howard R. Kennedy  
J. H. Ledbetter, Jr.  
William G. LyleJames L. McKnight  
F. C. Petty  
Jack Ross  
Biyece F. Runyon  
A. F. Russell  
D. R. Shipley  
Marion E. Spurgeon  
Charles A. Trahern  
Harold V. Vann  
Troy A. Walker  
William H. Wall, Jr.  
Paul E. Wilson  
R. M. Workman

## MOORE COUNTY

*Lynchburg*F. Harlan Booher  
(Mbr. Lincoln Co.)

## OBION COUNTY

*Kenton*Alden H. Gray  
(Mbr. Consolidated  
Cos.)*Obion*

W. S. Myers

*Troy*

Chesley H. Hill

*Union City*J. Kelly Avery  
M. A. Blanton, Jr.  
Harold D. Butler  
H. W. Calhoun  
Joe Campbell  
Wm. N. Carpenter  
B. O. Garner  
Dan C. Gary  
R. L. Gilliam, II  
Lawrence W. Jones  
E. P. Kingsbury, Jr.  
R. G. Latimer, Jr.  
E. McCall Morris  
James W. Polk  
Malcolm T. Tipton  
O. A. Zeller, Jr.OVERTON  
COUNTY*Livingston*M. E. Clark  
H. B. Nevans  
Denton D. Norris  
W. G. Quarles, Jr.

## PERRY COUNTY

*Linden*B. L. Holladay  
Gordon H. Turner,  
Jr.

## POLK COUNTY

*Benton*John H. Lillard  
(Mbr. McMinn Co.)*Copperhill*H. H. Hyatt  
(Mbr. Hamilton Co.)  
J. T. Layne  
(Mbr. Hamilton Co.)  
W. C. Zachary, Jr.  
(Mbr. Knox Co.)*Ducktown*Wm. R. Lee  
(Mbr. Hamilton  
Co.)PUTNAM  
COUNTY*Algood*

J. T. Moore, Jr.

*Cookeville*Jack L. Clark  
J. T. Deberry  
Kenneth L. Haile  
Wm. A. Hensley, Jr.  
Robert V. Larrick  
Jete W. Lowe  
William Mattson  
Thurman Shipley  
Wm. S. Taylor  
J. Fred Terry  
Claud M. Williams*Monterey*C. A. Collins  
T. M. Crain

## RHEA COUNTY

*Dayton*Albert C. Broyles  
(Mbr. Hamilton Co.)  
Lester F. Littell  
(Mbr. Hamilton Co.)  
J. J. Rodgers  
(Mbr. Hamilton Co.)  
W. A. Thomison  
(Mbr. Hamilton Co.)*Spring City*Conrad L. Grabeel  
(Mbr. Roane Co.)

## ROANE COUNTY

*Harriman*A. Julian Ahler  
Thomas L. Bowman  
Elbert C. Cunnin-  
gham  
Fred J. Hooper  
Lewis T. Howard  
H. Stratton Jones  
L. A. Killeffer  
John R. Sisk*Kingston*Chas. W. Moore-  
field  
P. R. Rothrock  
Nat Sugarman*Oak Ridge*

(See Anderson Co.)

*Oliver Springs*S. J. Van Hook  
Fred O. Stone*Rockwood*Thomas A. Fuller  
Robert S. Hicks  
Geo. Shacklett  
John V. Snodgrass,  
Jr.ROBERTSON  
COUNTY*Cedar Hill*

R. H. Elder

*Cross Plains*

Ora W. Ramsey

*Ridgetop*

E. E. Botsford

*Springfield*J. W. Atwood  
Sue C. Atwood  
Warren G. Hayes  
John M. Jackson  
J. R. Quarles  
N. H. Raines  
W. P. Stone  
John B. Turner  
Raymond H.  
Webster  
J. E. WilkisonRUTHERFORD  
COUNTY*Murfreesboro*Carl E. Adams  
Joseph C. Bailey  
W. Stanley Barham  
J. B. Black  
J. T. Boykin  
John Cason  
William E. Coop-  
wood  
B. S. Davison, Jr.  
David T. Dodd  
Paul C. Estes  
R. James Garrison  
S. C. Garrison, Jr.  
James E. Hampton  
T. Gilbert Gordon  
Richard E. Green  
Sam H. Hay  
R. D. Hollowell  
J. K. Kaufman  
Lois M. Kennedy  
Chas. W. Lewis  
Fred R. Lovelace  
M. B. Murfree, Jr.  
Eugene P. Odum  
Sam H. PattersonJames A. Payne  
Robert G. Ransom  
Creighton Rhea  
B. W. Rawlins  
Wm. M. Savage  
Wm. W. Shacklett  
Radford Smith  
Theodore G. Smith  
J. Howard Young,  
Jr.*Smyrna*

George Goodall

## SCOTT COUNTY

*Norma*

D. T. Chambers

*Oneida*M. F. Frazier  
Maxwell E. Huff  
H. M. Leeds  
Roy L. McDonald  
M. E. Thompson  
Milford ThompsonSEQUATCHIE  
COUNTY*Dunlap*Charles Graves  
(Mbr. Hamilton Co.)  
D. Clifford Luding-  
ton, Jr.  
(Mbr. Hamilton Co.)

## SEVIER COUNTY

*Gallinburg*

Ralph H. Shilling

*Sevierville*Troy J. Beeler\*  
R. A. Broady  
John M. Hickey, Jr.  
R. A. McCall  
Chas. L. Roach  
Robert F. Thomas  
O. H. Yarberry

## SHELBY COUNTY

*Arlington*

Malcolm A. Baker

*Collierville*

R. F. Kelsey

*Cordova*

C. A. Chaffee

*Forest Hill*

J. E. Clark

*Germantown*

John T. Carter, Jr.

*Memphis*Sara E. Abbott  
Robert F. Ackerman  
John Q. Adams  
L. H. Adams  
Ralph M. Adding-  
ton  
Henry L. Adkins  
Justin H. Adler  
Lorin E. Ainger  
Garabed H. Aivazian  
Albert M. Alexander  
James E. Alexander  
Chester G. Allen  
F. Pearson Allen  
Frank S. Allen  
Robert G. Allen  
F. H. Alley  
Jacob Alperin  
James L. Alston  
Lawrence D. Amick  
J. P. Anderson  
Lewis D. Anderson  
Sam B. Anderson,  
Jr.  
William F. Andrews  
Donald N.  
Anishanslin  
D. H. Anthony  
Robert A. Anthony  
Blake Arnould  
J. M. Aste  
H. E. Atherton  
Leland L. Atkins  
David F. Austin  
Edgar L. Austin  
Richard L. Austin  
W. W. Aycock  
J. C. Ayres, Jr.  
John W. Baird



- J. Earl Baker  
George F. Bale  
A. L. Bail  
Aden W. Barlow, Jr.  
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John M. Barron  
Jerome N. Barrasso  
Robert Basist  
John C. Beard, Jr.  
G. H. Bassett  
Emmett D. Bell, Jr.  
Steven H. Bell  
Arthur L. Bellott, Jr.  
Charles A. Bender  
Hal E. Bennett  
B. F. Benton  
Wm. M. Berton  
J. M. Bethae  
Richard O. Bicks  
Albert W. Biggs  
James D. Biles, Jr.  
E. S. Birdsong  
C. R. Bishop  
W. A. Bisson  
W. T. Black, Jr.  
Sam Blackwell  
Basil A. Bland, Jr.  
Breen Bland  
Phil B. Bleecker  
Robert F. Bonner  
Howard A. Boone  
James L. Booth  
C. Whitman Borg  
R. L. Bowland  
R. L. Bowlin  
Earl P. Bowerman  
H. B. Boyd  
Boyer M. Brady, Jr.  
E. E. Bramlitt  
Winston Braun  
R. R. Braund  
James T. Bridges  
James N. Brien, Jr.  
(Mbr. Consolidated Soc.)  
Carey Bringle  
Louis P. Britt, Jr.  
D. A. Brody  
Joseph H. Brock  
Maury Bronstein  
James S. Brown  
Lawrence E. Brown  
Harry G. Bryan  
Malvern T. Bryan  
James W. Bryant  
K. M. Buck  
Wm. D. Burkhalter  
Wm. B. Burrow\*  
Orin D. Butterick, Jr.  
James S. Byas  
Shed H. Caffey  
R. A. Calandrucio  
Edward P. Caldwell  
M. K. Callison  
E. Guy Campbell  
Ernest A. Canada  
Dominic J. Cara, Jr.  
Bland W. Cannon  
George M. Cannon  
Robert S. Caradine, Jr.  
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David S. Carroll  
Dan Carruthers, Jr.  
Harvey W. Carter  
L. L. Carter  
A. H. Chamberlain, Jr.  
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W. C. Chaney  
Ewin S. Chappell  
Fenwick W. Chappell  
R. E. Ching  
Joseph M. Chisolm  
Glenn M. Clark  
James A. Clark, Jr.  
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E. W. Cooke, Jr.  
Lawrence L. Cohen  
W. C. Colbert  
F. H. Cole  
B. C. Collins  
James H. Collins  
Frank H. Collins  
E. D. Connell  
John P. Conway  
George A. Coors  
Giles A. Coors  
G. Daniel Copeland  
Arthur A. Cox  
Erwin M. Cox  
John E. Cox  
Culver C. Craddock
- Rufus E. Craven  
E. A. Crawford  
S. E. Crawford  
(Mbr. Consolidated)  
Lloyd V. Crawford  
P. T. Crawford  
A. H. Crenshaw  
Thomas K. Creson, Jr.  
J. A. Crisler, Jr.  
Robert N. Crockett, Jr.  
C. V. Crosswell  
Terry P. Cruthirds  
James W. Culbertson  
Alvin J. Cummins  
Ray E. Curle  
Richard F. Daly  
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Harry Davis  
Norman H. Davis  
J. M. Davis  
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Hubert L. Dellinger, Jr.  
V. J. Demarco  
McCarthy DeMere  
Richard DeSaussure  
Alice R. Deutsch  
Melvin Wayne DeWees  
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L. W. Diggs  
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D. E. Dismukes\*  
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John B. Dorian, Jr.  
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Thomas G. Dorrity  
Chas. V. Dowling  
Paul T. Drenning  
Horton DuBard  
Marion Dugdale  
W. D. Dunavant  
James T. Duncan, Jr.  
Hamel B. Eason  
Elmer S. Eddins  
Allen S. Edmonson  
Joseph A. Elgart  
E. U. Epstein  
Cyrus C. Erickson  
James N. Etteldorf  
C. Barton Etter  
O. A. Eubanks, Jr.  
J. D. Evans  
M. L. Evans  
H. B. Everett  
B. E. Everett, Jr.  
Cornell C. Faquin, Jr.  
Harold G. Farley  
Turley Farrar  
Cyrus C. Farrow, Jr.  
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Daniel F. Fisher  
James B. Flanagan  
A. R. Flowers, Sr.  
Hugh Francis, Jr.  
Jerry Thomas  
Francisco  
W. Edward French  
Burt Friedman  
Eugene W. Gadberry  
James T. Galyon  
Joseph C. Garbarini, Jr.  
Herbert C. Gardner  
Elsbeth Gehorsam  
O. S. Gibbs  
D. Frederick Gioia  
C. E. Gilliespie  
John J. Gilluly  
B. H. Ginn  
George E. Gish  
Thomas C. Gladding  
Willard G. Glass  
C. H. Glover  
Fred A. Goldberg  
Ralph Goldman  
D. W. Goltman  
I. O. Gordon  
H. B. Gotten  
Nicholas Gotten  
Robert D. Gourley  
Thomas E. Goyer  
W. H. Gragg  
W. H. Gragg, Jr.  
Lester R. Graves, Jr.  
H. D. Gray  
Arthur W. Green  
C. R. Green  
Jack Greenfield  
A. J. Grobmyer, Jr.  
Pauline Grodsky
- Fred T. Grogan, Jr.  
Morton L. Gubin  
Nobel Guthrie  
James S. Haimsohm  
Hollis H. Halford, Jr.  
Jack R. Halford  
Emmett R. Hall, Jr.  
V. A. Hall  
Margaret A. Halle  
Ralph S. Hamilton  
J. F. Hamilton  
Wm. T. Hamilton  
John B. Hamsher  
Darwood B. Hance  
Mallory Harwell  
Howard B. Hasen  
Fred Erdman Hatch, Jr.  
Wm. H. Hatfield  
A. Kenneth Hawkes  
C. D. Hawkes  
Jean M. Hawkes  
C. L. Hay  
L. K. Haynes  
Louie C. Henry  
A. L. Herring  
George B. Higley  
George B. Higley, Jr.  
Fontaine S. Hill  
James M. Hill  
E. E. Hines  
Royce Hobby  
John Lewis Hobson  
W. K. Hoffman, Jr.  
M. W. Holehan  
J. E. Holmes  
David H. Holt  
Sherman H. Hoover  
Leo G. Horan  
Arthur E. Horne  
Glenn E. Horton  
Hubert L. Hotchkiss  
C. H. Householder  
John L. Houston  
Hector S.  
Howard, Jr.  
William T. Howard  
M. B. Howorth, Jr.  
James G. Hughes  
John D. Hughes  
Max O. Hughes  
Robert R. Hughes  
John V. Hummell  
Sam E. Hunter  
W. E. Hurt  
J. H. Ijams  
C. W. Ingle  
A. J. Ingram  
G. W. Stanley Ish, Jr.  
Charles E. Jabbour  
Thos. M. Jackson  
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Hal P. James  
J. A. James  
Oliver C. Jeffers  
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Halvern H. Johnson  
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George P. Jones, Jr.  
Joe Paul Jones  
R. Luby Jones  
Sidney D. Jones, Jr.  
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Stanley B. Kaplan  
Lyman A. Kasselberg  
Harvey L. Kay, Jr.  
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Marvin M. Keirns  
Ernest G. Kelly  
Henry G. Kessler  
W. F. Kimmell  
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J. C. King  
Howard H. Kitchens  
W. F. Klotz  
F. H. Knox, Jr.  
Robert L. Knox  
Sheldon B. Korones  
Alfred P. Kraus  
Bernard M. Kraus  
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Cary M. Kuykendall  
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J. Warren Kyle  
H. Z. Landis  
C. G. Landsee  
Herbert G. Lanford  
Frank A. Latham
- M. W. Latham  
A. E. Laughlin  
H. G. La Velle, Jr.  
Robert E. Lawson  
Thomas F. Leatherwood  
Wm. Hall Lee, Jr.  
Gilbert J. Levy  
L. C. Lewis  
P. M. Lewis  
Alys H. Lipscomb  
Geo. R. Livermore, Jr.  
D. G. Lockwood  
Charles E. Long  
William E. Long  
J. H. Lotz  
J. C. Loughheed  
Carruthers Love  
Varna P. Love  
Martha A. Loving  
George S. Lovejoy  
William M. Lovejoy  
Edward H. Mabry  
W. F. Mackey  
Ray W. Mackey  
Holt B. Maddox  
James K. Maguire  
Battle Malone II  
T. P. Manigan  
John C. Mankin  
Philip M. Markle  
M. M. Marolla  
Carl D. Marsh  
C. H. Marshall  
George W. Marten  
Tinnin Martin, Jr.  
A. D. Mason, Jr.  
Wm. W. Mason  
Gordon L. Mathes  
O. S. Matthews  
William P. Maury, Jr.  
R. F. Mayer  
L. H. Mayfield  
Robert P. McBurney  
Chas. B. McCall  
John W. McCall  
John G. McCarter, Jr.  
J. J. McCaughan  
B. F. McCleave  
James G. McClure  
D. C. McCool  
R. B. McCormick  
Wm. F. McCormick  
L. K. McCown  
E. F. McDaniel, Jr.  
John L. McGee, Jr.  
J. Wesley McKinney  
A. M. McLarty  
B. E. McLarty  
Richard P. McNelis  
George McPherson  
Elise T. McQuiston  
A. H. Meyer, Jr.  
Robert M. Miles  
Lee W. Milford, Jr.  
C. W. Miller, Jr.  
Fox Miller  
George L. Miller, Jr.  
Harold R. Miller  
Joseph H. Miller  
Richard A. Miller  
Richard Braun  
Richard W. Miller  
David M. Mills  
Geo. T. Mills  
J. Purvis Milnor, Jr.  
W. D. Mims  
I. C. Minkin  
B. G. Mitchell  
E. D. Mitchell, Jr.  
F. T. Mitchell  
W. R. Mitchum  
E. C. Mobely  
J. C. Mobely, Jr.  
Wm. L. Moffatt  
E. M. Molinski  
Ralph H. Monger, Jr.  
Fontaine B. Moore, Jr.  
James A. Moore  
Moore Moore, Jr.  
Wm. H. Morse  
Ralph F. Morton  
Wm. H. Moshier  
Henry Moskowitz  
J. P. Moss  
T. C. Moss  
R. Lyle Motley  
Kenneth J. Munden  
Francis Murphey
- Walter H. Murphy  
W. F. Murrah, Jr.  
Roland H. Myers  
John P. Nash  
Chas. Lea Neely, Jr.  
John C. Newton  
Eugene R. Nobles, Jr.  
Robert S. Norman  
Wm. L. Northern, Jr.  
Lester C. Nunnally  
D. W. Oelker  
Evelyn Bassi Ogle  
L. C. Ogle  
Claude D. Oglesby  
Charles B. Olim  
J. C. Orman  
Phil E. Orpet, Jr.  
Wm. J. Oswald  
Alfred H. Page  
Gene R. Page  
Joseph B. Parker, Jr.  
Charles W. Parrott, Jr.  
Samuel Paster  
Samuel W. Pate  
Rush-ton E. Patterson  
Russell H. Patterson, Jr.  
Sam Polk Patterson  
Morris Pasternack  
Bernard S. Patrick  
Raphael N. Paul  
G. E. Paullus, Jr.  
Iris A. Pearce  
Phillip A. Pedigo  
John D. Peoples, Jr.  
B. L. Pentecost  
Maurice C. Pian, Jr.  
John D. Piggott  
W. H. Pistole  
Gerald I. Plitman  
Mary Frances Poe  
R. M. Pool  
A. R. Porter, Jr.  
C. H. Porter  
Huey H. Porter  
Stephen A. Pridgen  
Wm. Roby Pridgen  
Edward McCall  
Priest  
Helen Prieto  
L. C. Prieto  
S. L. Raines  
Robert L. Rainey  
W. T. Rainey (Mbr. N.W. Tenn. Acad.)  
Darwin W. Rannels  
R. B. Ray  
John J. Redmon  
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Harvey C. Reese, Jr.  
H. Eugene Reese  
J. R. Reinberger  
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Walter A. Rentrop  
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Chas. R. Riggs  
George A. Riley  
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Walker, Jr.  
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lian  
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ford, Jr.  
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Walter H. Stephen-  
son  
James R. Troutt, Jr.  
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*Johnson City*  
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 Justin C. Blevins  
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E. T. Brading  
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et al  
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Dexter L. Woods  
Dexter L. Woods, Jr.

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| J. M. Ousley, Maryville                             | Blount   |
| K. A. Bryant, Maryville                             | Blount   |
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| S. E. McDonald, Bells                               | Crockett |
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| Anna M. Bowie, 1616 18th Ave., So., Nashville       | Davidson |
| C. E. Brush, 2320 West End Avenue, Nashville        | Davidson |
| O. N. Bryan, 2122 West End Avenue, Nashville        | Davidson |
| B. F. Byrd, Sr., 301 7th Ave., No., Nashville       | Davidson |
| Lucien Caldwell, RFD No. 4, Holt Road, Nashville    | Davidson |
| Will Camp, Rock Island                              | Davidson |
| Sam Cowan, Sr., 1916 Church Street, Nashville       | Davidson |
| W. C. Dixon, Doctors Building, Nashville            | Davidson |
| Beverly Douglas, Med. Arts Bldg., Nashville         | Davidson |
| Henry L. Douglass, Doctors Bldg., Nashville         | Davidson |
| L. W. Edwards, 2001 Hayes St., Nashville            | Davidson |
| Duncan Eve, 2001 Hayes Street, Nashville            | Davidson |
| W. H. Faulkner, 1601 Phillips St., Nashville        | Davidson |
| W. Frank Fessey, 2413 West End Ave., Nashville      | Davidson |
| R. B. Gaston, 2760 Lebanon Rd., Nashville           | Davidson |
| R. W. Crizard, 1310 Church Street, Nashville        | Davidson |
| George A. Hatcher, College Grove                    | Davidson |

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| R. N. Herbert, 4124 Franklin Road, Nashville           | Davidson                |
| J. Harvill Hite, Bennie Dillon Bldg., Nashville        | Davidson                |
| Wm. A. Horan, 1104 Ordway Place, Nashville             | Davidson                |
| W. P. Law, 618 Murfreesboro Road                       | Davidson                |
| John M. Lee, Doctors Bldg., Nashville                  | Davidson                |
| John J. Lentz, 311 23rd Ave., No., Nashville           | Davidson                |
| James B. Lester, Bennie Dillon Bldg., Nashville        | Davidson                |
| C. C. McClure, Sr., 5650 Hillsboro Rd., Nashville      | Davidson                |
| D. L. Mumpower, 4114 Gallatin Road, Nashville          | Davidson                |
| Oscar C. Nelson, 1310 Church St., Nashville            | Davidson                |
| O. A. Oliver, D.D.S., 1915 Broad St., Nashville        | Davidson                |
| T. G. Pollard, Doctors Building, Nashville             | Davidson                |
| Bruce P'Pool, Doctors Building, Nashville              | Davidson                |
| W. E. Reynolds, 1200 Plymouth Ave., Nashville          | Davidson                |
| Edwin L. Roberts, 1913 Hillsboro Rd., Nashville        | Davidson                |
| B. T. Rucks, 6228 Cellini St., Coral Gables, Fla.      | Davidson                |
| H. H. Shoulders, 2315 Woodmont Blvd., Nashville        | Davidson                |
| H. S. Shoulders, Doctors Bldg., Nashville              | Davidson                |
| Robert E. Sullivan, 203 Evelyn Ave., Nashville         | Davidson                |
| R. B. F. Sweeney, 907 Thoma Street, Manchester         | Davidson                |
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| Harold Trueberg, 820 Normal Circle, Memphis            | Davidson                |
| Harlin Tucker, VA Regional Office, Nashville           | Davidson                |
| James J. Vaughan, D.D.S., 1921 Division St., Nashville | Davidson                |
| Robert J. Wanner, 204 Hillwood Dr., Nashville          | Davidson                |
| Jack Witherspoon, Doctors Bldg., Nashville             | Davidson                |
| W. J. Sugg, Dickson                                    | Dickson                 |
| W. S. Alexander, Ridgeley                              | Dyer, Lake and Crockett |
| J. A. Ledbetter, Dyersburg                             | Dyer, Lake and Crockett |



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| John W. Morris, Somerville                            | Fayette                 | J. A. McIntosh, Col. Mut. Tower, Memphis             | Shelby                     |
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| W. C. McRee, Trenton                                  | Gibson                  | 21, N. Y.  | Shelby                     |
| W. J. Johnson, Pulaski                                | Giles                   | L. P. Pearce, Collierville                           | Shelby                     |
| Wm. A. Lewis, Pulaski                                 | Giles                   | J. W. Ragsdale, 1001 Madison, Memphis                | Shelby                     |
| L. E. Coolidge, Greeneville                           | Greene                  | Alma B. Richards, 1214 Central Ave., Memphis         | Shelby                     |
| J. G. Hawkins, Greeneville                            | Greene                  | W. L. Rucks, 3314 Poplar Ave., Memphis               | Shelby                     |
| W. T. Mathes, Greeneville                             | Greene                  | Harry C. Schmeisser, 4225 Walnut Grove, Rd., Memphis | Shelby                     |
| Stanton H. Barrett, 1001 East 9th, Chattanooga        | Hamilton                | Neuton S. Stern, 899 Madison Ave., Memphis           | Shelby                     |
| John L. Cooley, Tarpon Springs, Florida               | Hamilton                | S. B. Williamson, Milan, Tenn.                       | Shelby                     |
| Chattanooga   | Hamilton                | W. L. Williamson, 40 South Evergreen, Memphis        | Shelby                     |
| Oscar D. Groshart, Provident Bldg., Chattanooga       | Hamilton                | Percy H. Wood, 411 North Highland, Memphis           | Shelby                     |
| German P. Haymore, Hoghead Apts., Chattanooga         | Hamilton                | R. E. Key, Carthage                                  | Smith                      |
| C. R. Henry, 1513 Carroll Lane, Chattanooga           | Hamilton                | Isham H. Beasley, Gallatin                           | Sumner                     |
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| Harold J. McAlister, 1301 Dodds Ave., Chattanooga     | Hamilton                | A. J. Edwards, 808 Moore St., Bristol, Va.           | Sullivan-Johnson           |
| E. E. Reisman, MacClellan Bldg., Chattanooga          | Hamilton                | A. B. English, 26 4th St., Bristol                   | Sullivan-Johnson           |
| Herman Renner, 1312 Shady Circle, Chattanooga         | Hamilton                | Arthur Hooks, 26 4th St., Bristol                    | Sullivan-Johnson           |
| J. McClure Richard, Hixson, Rt. No. 3                 | Hamilton                | S. R. McDowell, Blountville                          | Sullivan-Johnson           |
| G. Madison Roberts, Sr., 413 James Bldg., Chattanooga | Hamilton                | Alan K. Turner, 200 Solar St., Bristol, Va.          | Sullivan-Johnson           |
| John B. Steele, 106 Morningside Drive, Chattanooga    | Hamilton                | W. A. Tyler, Kingsport                               | Sullivan                   |
| G. Victor Williams, 905 Tremont, Chattanooga          | Hamilton                | Aaron Cole, Piney Flats                              | Washington, Carter, Unicoi |
| P. M. Bishop, Whiteville                              | Hardeman                | John L. Hankins, Johnson City                        | Washington, Carter, Unicoi |
| J. S. Lyons, Rogersville                              | Hawkins                 | U. G. Jones, Johnson City                            | Washington, Carter, Unicoi |
| O. M. Swanay, Rogersville                             | Hawkins                 | A. J. Willis, Jonesboro                              | Washington, Carter, Unicoi |
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| E. B. Paschall, Paris                                 | Henry                   | J. O. Walker, Franklin                               | Williamson                 |
| Eben Alexander, Eastern State Hospital, Knoxville     | Knox                    |  |                            |
| M. C. Bowman, Woodson Drive, Knoxville                | Knox                    |  |                            |
| Ray V. DePue, Doctors Bldg., Knoxville                | Knox                    |  |                            |
| E. A. Guynes, 114 Hotel Avenue, Fountain City         | Knox                    |  |                            |
| Louis A. Haun, Med. Arts Bldg., Knoxville             | Knox                    |  |                            |
| M. L. Jenkins, Coryton                                | Knox                    |  |                            |
| A. R. McCullough, West Church Ave., Knoxville         | Knox                    |  |                            |
| R. L. McReynolds, Med. Arts Bldg., Knoxville          | Knox                    |  |                            |
| Robert F. Patterson, Medical Art Bldg., Knoxville     | Knox                    |  |                            |
| S. Joe Platt, Blount Prof. Bldg., Knoxville           | Knox                    |  |                            |
| W. D. Richards, Hamilton Bank Bldg., Knoxville        | Knox                    |  |                            |
| M. S. Roberts, Medical Arts Bldg., Knoxville          | Knox                    |  |                            |
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| J. R. Lewis, Ripley                                   | Lauderdale              |  |                            |
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| C. L. Goodrich, Fayetteville                          | Lincoln                 |  |                            |
| Robt. E. McCown, Fayetteville                         | Lincoln                 |  |                            |
| J. E. Sloan, Fayetteville                             | Lincoln                 |  |                            |
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| Claude Y. Clarke, Mt. Pleasant                        | Maury                   |  |                            |
| G. C. English, Mt. Pleasant                           | Maury                   |  |                            |
| James H. Jones, Mt. Pleasant                          | Maury                   |  |                            |
| B. H. Woodard, Spring Hill                            | Maury                   |  |                            |
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| J. H. Carr, Oakdale                                   | Morgan                  |  |                            |
| M. M. Green, Montgomery Co. Health Dept., Clarksville | Montgomery              |  |                            |
| B. F. Runyon, 408 Franklin St., Clarksville           | Montgomery              |  |                            |
| M. L. Shelby, 112 8th Street, Clarksville             | Montgomery              |  |                            |
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| Lex Dyer, Cookeville                                  | Putnam                  |  |                            |
| L. M. Freeman, Granville                              | Putnam                  |  |                            |
| W. A. Howard, Cookeville                              | Putnam                  |  |                            |
| R. H. Millis, Cookeville                              | Putnam                  |  |                            |
| J. T. Moore, Sr., Algood                              | Putnam                  |  |                            |
| John S. Freeman, Springfield                          | Robertson               |  |                            |
| J. S. Hawkins, Springfield                            | Robertson               |  |                            |
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| C. D. Allen, 1019 Mad Ave., Memphis                   | Shelby                  |  |                            |
| S. B. Anderson, 956 Hiawatha, Memphis                 | Shelby                  |  |                            |
| L. F. Beauchamp, 538 Stonewall, Memphis               | Shelby                  |  |                            |
| L. F. Boyd, 2067 Hallwood Drive, Memphis              | Shelby                  |  |                            |
| Wm. Britt Burns, 4123 Monticello St., Abilene, Texas  | Shelby                  |  |                            |
| J. P. Carter, 649 White Station Road, Memphis         | Shelby                  |  |                            |
| T. N. Coppedge, 1807 Harbert, Memphis                 | Shelby                  |  |                            |
| R. R. Davenport, 664 No. McLean, Memphis              | Shelby                  |  |                            |
| R. B. Flaniken, 1115 Madison Ave., Memphis            | Shelby                  |  |                            |
| W. R. Graves, 505 So. Highland, Memphis               | Shelby                  |  |                            |
| Emmett H. Hall, Exchange Bldg., Memphis               | Shelby                  |  |                            |
| B. F. Hardin, Hickman Bldg., Memphis                  | Shelby                  |  |                            |
| E. C. Ham, 725 Jackson Ave., Memphis                  | Shelby                  |  |                            |
| Joel J. Hobson, 321 So. Bellevue, Memphis             | Shelby                  |  |                            |
| A. G. Hudson, 3474 Southern Ave., Memphis             | Shelby                  |  |                            |
| H. B. Jacobson, 114 No. McLean Ave., Apt. 2, Memphis  | Shelby                  |  |                            |
| D. H. James, 1125 Exchange Bldg.                      | Shelby                  |  |                            |
| V. D. King, 1037 North Parkway, Memphis               | Shelby                  |  |                            |
| O. M. Laten, 1618 Exchange Bldg., Memphis             | Shelby                  |  |                            |
| W. H. Lovejoy, 511 South Parkway, East, Memphis       | Shelby                  |  |                            |
| J. W. Mason, 606 Chelsea Ave., Memphis                | Shelby                  |  |                            |
| C. R. Mason, 14 West Mallory Ave., Memphis            | Shelby                  |  |                            |
| J. W. Mason, 606 Chelsea Ave., Memphis                | Shelby                  |  |                            |
| R. F. Mason, 188 So. Bellevue, Memphis                | Shelby                  |  |                            |
| J. E. Meadors, 3383 Summer Ave., Memphis              | Shelby                  |  |                            |
| A. H. Meyer, Sr., Sterick Bldg., Memphis              | Shelby                  |  |                            |
|   |                         | Cox, J. M., Lake City                                | Anderson                   |
|   |                         | Scott, R. B., Lake City                              | Anderson                   |
|   |                         | Farrar, J. Horace, Manchester                        | Coffee                     |
|   |                         | Stallings, W. H., Friendship                         | Crockett                   |
|   |                         | Mitchell, E. W., Crossville                          | Cumberland                 |
|   |                         | Beasley, R. P., Dickson                              | Dickson                    |
|   |                         | Anderson, Joe D., Nashville                          | Davidson                   |
|   |                         | Anderson, James P., Thomasville, Ga.                 | Davidson                   |
|   |                         | Billington, R. W., Franklin                          | Davidson                   |
|   |                         | Gass, R. S., Nashville                               | Davidson                   |
|   |                         | Hardy, William Moore, Nashville                      | Davidson                   |
|   |                         | King, J. Howard, Nashville                           | Davidson                   |
|   |                         | Morgan, Hugh J., Nashville                           | Davidson                   |
|   |                         | Paty, Harold E., Nashville                           | Davidson                   |
|   |                         | Saunders, John M., Washington, D. C.                 | Davidson                   |
|   |                         | Seward, Douglas C., Nashville                        | Davidson                   |
|   |                         | Young, T. Hugh, Nashville                            | Davidson                   |
|   |                         | Kirby-Smith, R. M., Sewanee                          | Franklin                   |
|   |                         | Hughes, R. F., Milan                                 | Gibson                     |
|   |                         | Edmondson, L. A., Prospect                           | Giles                      |
|   |                         | Campbell, J. T., Tusculum                            | Greene                     |
|   |                         | Painter, F. F., Morristown                           | Hamblen                    |
|   |                         | Henry, Charles R., Chattanooga                       | Hamilton                   |
|   |                         | Laws, Hiram A., Jr., Chattanooga                     | Hamilton                   |
|   |                         | Shumacker, Leopold, Chattanooga                      | Hamilton                   |
|   |                         | von Wersowetz, Arthur J., Chattanooga                | Hamilton                   |
|   |                         | Reeves, C. E., Gainesboro                            | Jackson                    |
|   |                         | Duly, J. R., Columbia                                | Maury                      |

## MEMBERS RESIDING OUTSIDE OF TENNESSEE

|  |  |
|--|--|
| Austin, George N., University of Missouri, School of Medicine, Columbia, Mo.   |  |
| Bain, Robert S., Miners Memorial Hospital, Apt. #214, Whitesburg, Ky.          |  |
| Barker, George, 209 Fern Street, Birmingham, Ala.                              |  |
| Burrus, George R., India   |  |
| Blackwell, Frank M., 2349 Eastway Road, Decatur, Ga.                           |  |
| Brinkley, Bill B., 633 State Street, Bristol, Va.                              |  |
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| Bruiks, Velta, Drawer "A", Dillshoro, N. C.                                    |  |
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| Cutshaw, Edward G., Quitman, Ga.   |  |
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| Henry, Carl, New Castle, Ky.   |  |
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| Meneely, George R., Dept. of Scientific Assembly, A.M.A., Chicago, Ill.        |  |
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| Steadman, Hunter M., 604 Avenue "D", Denton, Texas                             |  |
| Walker, Starnes E., Park Central Hotel, 500 E. Armour, Kansas City 2, Mo.      |  |
| White, Joel J., Park Lane Apartments, Jacksonville, Fla.                       |  |
| Wright, James C., 201 Richmond Avenue, Rossville, Ga.                          |  |

## DECEASED MEMBERS—1962

|                                       |            |
|---------------------------------------|------------|
| Cox, J. M., Lake City                 | Anderson   |
| Scott, R. B., Lake City               | Anderson   |
| Farrar, J. Horace, Manchester         | Coffee     |
| Stallings, W. H., Friendship          | Crockett   |
| Mitchell, E. W., Crossville           | Cumberland |
| Beasley, R. P., Dickson               | Dickson    |
| Anderson, Joe D., Nashville           | Davidson   |
| Anderson, James P., Thomasville, Ga.  | Davidson   |
| Billington, R. W., Franklin           | Davidson   |
| Gass, R. S., Nashville                | Davidson   |
| Hardy, William Moore, Nashville       | Davidson   |
| King, J. Howard, Nashville            | Davidson   |
| Morgan, Hugh J., Nashville            | Davidson   |
| Paty, Harold E., Nashville            | Davidson   |
| Saunders, John M., Washington, D. C.  | Davidson   |
| Seward, Douglas C., Nashville         | Davidson   |
| Young, T. Hugh, Nashville             | Davidson   |
| Kirby-Smith, R. M., Sewanee           | Franklin   |
| Hughes, R. F., Milan                  | Gibson     |
| Edmondson, L. A., Prospect            | Giles      |
| Campbell, J. T., Tusculum             | Greene     |
| Painter, F. F., Morristown            | Hamblen    |
| Henry, Charles R., Chattanooga        | Hamilton   |
| Laws, Hiram A., Jr., Chattanooga      | Hamilton   |
| Shumacker, Leopold, Chattanooga       | Hamilton   |
| von Wersowetz, Arthur J., Chattanooga | Hamilton   |
| Reeves, C. E., Gainesboro             | Jackson    |
| Duly, J. R., Columbia                 | Maury      |

|                                    |            |                                      |          |
|------------------------------------|------------|--------------------------------------|----------|
| Walton, Charles D., Mount Pleasant | Maury      | Hayes, James E., Memphis             | Shelby   |
| Yeiser, Watt, Columbia             | Maury      | James, C. E., Memphis                | Shelby   |
| Williamson, Eleanor, Columbia      | Maury      | King, C. C., Memphis                 | Shelby   |
| Kirkpatrick, J. W., Richard City   | Marion     | Livermore, George R., Memphis        | Shelby   |
| John W. Ross, Clarksville          | Montgomery | Riggs, W. Webster, Memphis           | Shelby   |
| Boswell, E. A., Troy               | Obion      | Rychener, Ralph O., Memphis          | Shelby   |
| Henderson, J. Victor, Knoxville    | Knox       | Bridges, Joe G., Gordonsville        | Smith    |
| Bronstein, J. H., Memphis          | Shelby     | Bachman, J. S., Bristol              | Sullivan |
| Cohen, Max H., Memphis             | Shelby     | Patterson, Norman G., Bristol, Tenn. | Sullivan |
| Farrington, P. M., Memphis         | Shelby     | Ames, J. L., Mt. Juliet              | Wilson   |
| Goldsmith, Lester L., Memphis      | Shelby     |                                      |          |



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## PLACEMENT SERVICE

*The Placement Service of the Tennessee State Medical Association is designed to assist doctors and communities to get together. Further information and contacts to both physicians and communities are available from the Public Service Office, 112 Louise Avenue, Nashville 5, Tennessee.*

### Locations Wanted

A 50 year old married Board certified surgeon would like to establish general, thoracic, endoscopy surgery practice with an associate, either clinical or private, in any section of Tennessee. Protestant; graduate of Syracuse University School of Medicine. Available upon notice. LW-418

General surgeon, 30 years of age, graduate of the Medical College of Georgia, with five years residency, is interested in locating in a Tennessee city of 20,000 plus, no preference as to area, in associate or group practice. Protestant; married; available immediately. LW-440

A 33 year old Internist would like institutional practice in any section of Tennessee, any population. Graduate St. Louis College of Medicine; married; Catholic; residency training. Available immediately. LW-448

A 32 year old native Tennessean, graduate of University of Tennessee School of Medicine, now completing training in surgery, is interested in practice in West or Middle Tennessee. Available June 30, 1963. LW-452

A Board certified general surgeon, with an interest in urology, a graduate of Vanderbilt Medical School, would like clinical or associate practice in any city or town in middle or west Tennessee. Age 34; married; Protestant. Available at any time. LW-453

A general practitioner, now interning, would like clinical or associate practice in any east Tennessee town of 2,000 to 25,000. Age 28; married; graduate of the University of Tennessee School of Medicine; available January 1963. LW-457

A 33 year old physician, Board eligible in internal medicine, graduate of the University of Louvain, with three years residency, would like clinical, group, institutional, or associate practice in any location in Tennessee in or near a large city. Married; Jewish; available January, 1963. LW-458

A 27 year old Ob-Gyn, native Tennessean, graduate of the University of Tennessee School of Medicine, now in residency training, would like clinical or associate practice in any area of Tennessee, 10,000 or less population. Married; Methodist; available January 1964. LW-471

A general practitioner, with surgery and anesthesia training, graduate of the Medical College of Georgia, would like to establish either solo or associate practice in Tennessee. Any size town, in any area. Residency training; now in practice. Married; 43 years of age; Presbyterian; available January 1, 1963. LW-472

A 29 year old native Tennessean, graduate of the Vanderbilt University Medical School, would like industrial, insurance, or aviation medicine practice in large city of middle Tennessee. Now staff physician at small private hospital. Married; Protestant; available January 1963. LW-473

### Physicians Wanted

A pediatrician, with two years internship and one year residency training, needed in middle Tennessee community to establish practice. Office space available near hospital. PW-137

A well established, prosperous community immediately adjacent to a large city, is in need of a general practitioner to establish solo or clinical practice. PW-168

A physician in East Tennessee city of 2,000 would like to share office and equipment with an associate general practitioner. Good housing facilities available; good schools. Hospital within 15 miles. PW-169

Surgeon wanted to assume practice of physician, leaving to enter residency training, in a middle Tennessee city of over 200,000. Furnished office available in clinic with OB-GYN and dentist. PW-171

Furnished office available in clinic located in suburb of middle Tennessee city of over 200,000 for Internist to assume practice of physician leaving. PW-172

FOR SALE: Lucrative medical practice and new, modern, centrally heated and air-conditioned and fully equipped office, in uptown location of middle Tennessee town of 10,000; trade area 30,000. Financing can be arranged. Owner wishes to retire from private practice. PW-174

A general practitioner, in middle Tennessee town of 1,200 (trade area over 8,000) would like an associate with at least 2 years residency in general surgery, not over 45 years of age. Good schools; near excellent recreational facilities; housing facilities and office space adequate, some office equipment available. PW-175

One or two physicians needed in east Tennessee community of 15,000. Housing, office space, and equipment available. Good schools, recreational facilities. Hospital within 17 miles. PW-178

General practice available Jan. 1, 1963, in upper west Tennessee community of over 800; hospital facilities nearby. No other doctor in area; clinic owned by town and leased; completely equipped; well established practice; housing available; any financial arrangements desired easily worked out. PW-179

A physician in east Tennessee city of 200,000 would like general practitioner as assistant in 27 bed private hospital. One year internship desired. Office space and equipment provided. PW-181

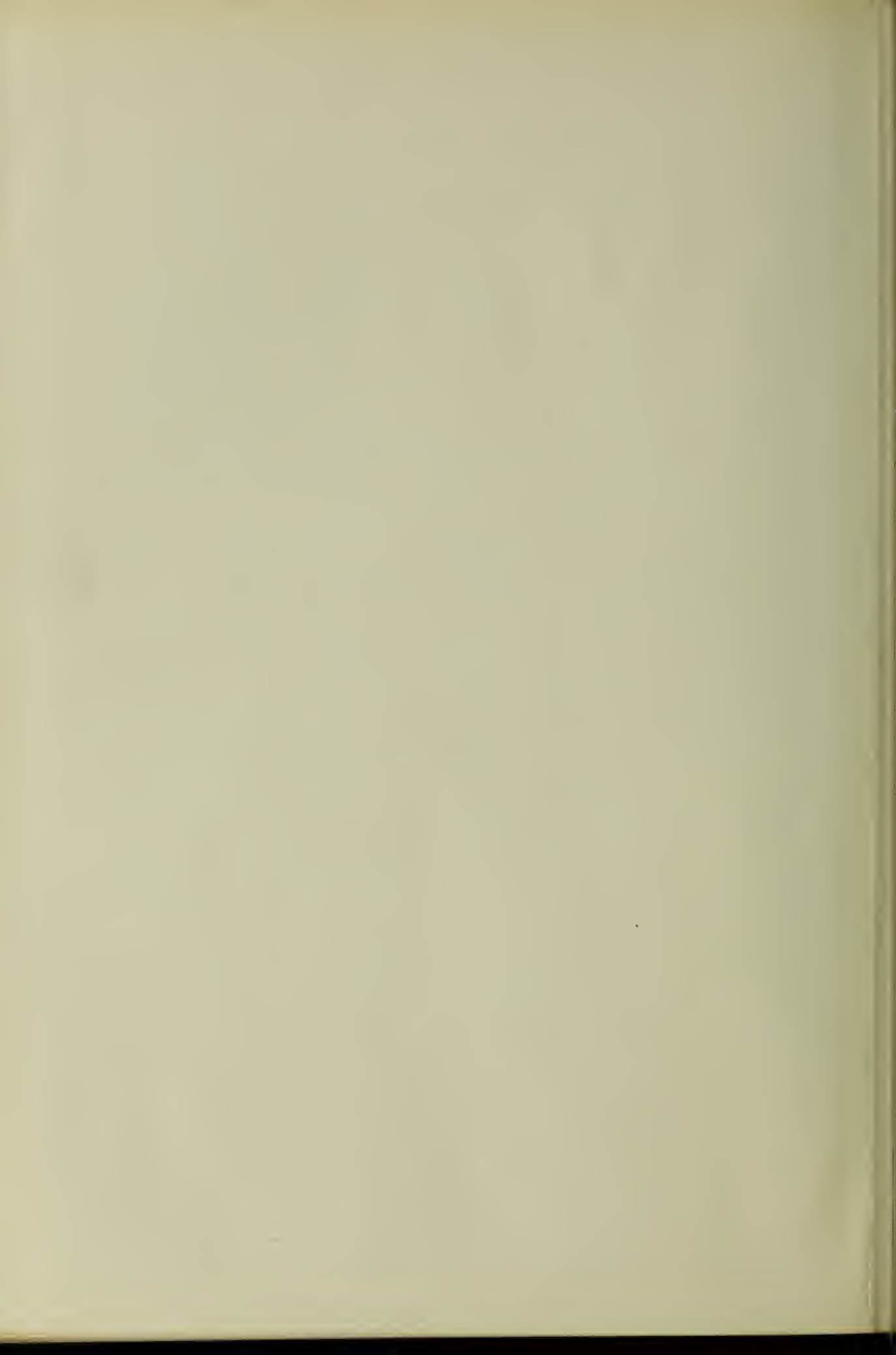












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